

## WINTER WHEAT

## AEROBIC

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium to long
Density:	dense
Shape (side profile)	parallel sided
Awns or scurs - presence:	awns present
Awns or scurs - distribution:	
Awns or Scurs - length:	very long
Apical rachis segment - convex face hairiness:	weak
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak to medium - group 1 to 2
Beak length:	medium to long
Beak shape (curvature):	slightly curved
Shoulder	narrow
Shoulder	slightly sloping

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	medium

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thick

#### Glaucosity

Flag leaf - sheath:	weak to medium
Flag leaf - blade (lower side):	very weak to weak
Culm neck:	weak
Ear - Glaucosity:	absent or very weak

#### Plant growth characters

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	semi-prostrate
Time ear emergence:	early
Flag leaf - Anthocyanin colouration of auricles:	

## WINTER WHEAT

AFP 1/1564

# ALCHEMY

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	absent or very weak

**AMBROSIA****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	straight

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak

**AMPLIFY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium to strong (2+)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

Variety Name: **ANAPOLIS**

Crop: Winter wheat

Breeder's Reference:

AFP No: 1/2148

Breeder: NORDSAAT

Translated from: German

Origin:

Date: 23 July 2013

Code: ANAP

<b>Coleoptile-anthocyanin colouration:</b>	Medium to strong
*Plant - growth habit:	Semi prostrate
*Time ear emergence:	Medium to late
<b>Flag leaf - Anthocyanin colouration of auricles:</b>	
<b>Frequency of plants with recurved flag leaves:</b>	Very low to low
*Flag leaf - Glaucosity of sheath:	Strong to very strong
<b>Flag leaf - Glaucosity of leaf blade:</b>	Strong
<b>Anthers - anthocyanin colouration:</b>	
<b>Glaucosity of neck:</b>	Strong to very strong
<b>Hairiness of uppermost node:</b>	
*Plant - height:	Short to medium
*Straw - wall thickness @ 20cms below ear:	Absent or very thin.
*Ear - Glaucosity:	Strong to very strong
<b>Ear - Supernumerary spikelets - frequency:</b>	
*Ear - Colour:	White
*Ear - Shape (side profile):	Tapering
<b>Ear - Length:</b>	Medium
*Ear - Density:	Lax to medium
*Awns or scurs - presence:	Present
<b>Awns or scurs - distribution:</b>	
*Scurs at tip of ear - length:	Very short to short
*Awns at tip of ear - length:	
<b>Lower glume - Beak length:</b>	Very short to short
<b>Lower glume - Beak shape (curvature):</b>	Slightly curved
<b>Lower glume - Beak tip:</b>	
<b>Lower glume - Shoulder width:</b>	Narrow
<b>Lower glume - Shoulder type:</b>	Straight
<b>Lower glume - External surface roughness:</b>	
<b>Lower glume - Extent of internal hairs:</b>	Medium
<b>Lower glume - Internal imprint:</b>	
<b>Lower lemma - Beak shape:</b>	Slightly curved
<b>Lower lemma - Beak length-:</b>	
<b>Lower lemma - Beak swelling:</b>	
<b>Apical rachis segment - convex face hairiness:</b>	Strong
*Grain - colour:	Red
<b>Grain - Shape:</b>	
<b>Grain - Brush hair length in dorsal view:</b>	
<b>Grain - Colouration with phenol:</b>	Medium to dark
*Seasonal type:	Winter
<b>Extra characters:</b>	

\* = Characteristics which should always be included in the description of the variety.

31 March 2015

**ARARAT****CHARACTERS IN DETAIL****Ear**

Colour:	white
Length:	medium to long
Density:	lax
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	very weak to weak
Anthers - anthocyanin colouration	

**Lower Glume**

External surface roughness:	
Extent of internal hairs:	medium - group 2
Beak length:	medium
Beak shape (curvature):	moderately curved
Shoulder	medium
Shoulder	elevated

**Lower Lemma**

Beak shape:	slightly curved
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**Grain**

Colour	red
Colouration with phenol:	medium

**Straw**

Length:	medium
Wall thickness @ 20cms below ear:	thin

**Glaucosity**

Flag leaf - sheath:	medium to strong
Flag leaf - blade (lower side):	medium to strong
Culm neck:	strong
Ear - Glaucosity:	strong to very strong

**Plant growth characters**

Coleoptile-anthocyanin	medium
Plant - growth habit:	intermediate to semi-prostrate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak

Variety Name: **Arkeos**

**Crop:**

**Breeder's Reference:**

**AFP No:**

**Breeder:** Nickerson International Research

**Translated from:**

**Origin:**

**Date:** 26 January 2015

**Code:** ARKE

**Coleoptile-anthocyanin colouration:**

Medium

**\*Plant - growth habit:**

Semi- prostrate to prostrate

**\*Time ear emergence:**

Early

**Flag leaf - Anthocyanin colouration of auricles:**

**Frequency of plants with recurved flag leaves:**

**\*Flag leaf - Glaucosity of sheath:**

Strong to very strong

**Flag leaf - Glaucosity of leaf blade:**

Strong to very strong

**Anthers - anthocyanin colouration:**

**Glaucosity of neck:**

**Hairiness of uppermost node:**

**\*Plant - height:**

Short to medium

**\*Straw - wall thickness @ 20cms below ear:**

Very thin

**\*Ear - Glaucosity:**

Medium

**Ear - Supernumerary spikelets - frequency:**

**\*Ear - Colour:**

White

**\*Ear - Shape (side profile):**

**Ear - Length:**

Long

**\*Ear - Density:**

Lax to medium

**\*Awns or scurs - presence:**

Present

**Awns or scurs - distribution:**

**\*Scurs at tip of ear - length:**

Short to medium

**\*Awns at tip of ear - length:**

**Lower glume - Beak length:**

Short to medium

**Lower glume - Beak shape (curvature):**

**Lower glume - Beak tip:**

**Lower glume - Shoulder width:**

Narrow

**Lower glume - Shoulder type:**

Straight to slightly sloping

**Lower glume - External surface roughness:**

**Lower glume - Extent of internal hairs:**

**Lower glume - Internal imprint:**

Medium to strong

**Lower lemma - Beak shape:**

Slightly curved

**Lower lemma - Beak length-:**

Short to medium

**Lower lemma - Beak swelling:**

**Apical rachis segment - convex face hairiness:**

Medium

**\*Grain - colour:**

Red

**Grain - Shape:**

**Grain - Brush hair length in dorsal view:**

**Grain - Colouration with phenol:**

Medium to dark

**\*Seasonal type:**

Winter

**Extra characters:**

\* = Characteristics which should always be included in the description of the variety.

30 March 2015

**AVATAR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	



**BARKSTON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**BATSMAN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1599

# BATTALION

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	rough
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

# BELENUS

### CHARACTERS IN DETAIL

#### Ear

Colour:	coloured
Length:	short
Density:	medium
Shape (side profile)	parallel sided
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness:	weak
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak - group 1
Beak length:	very short
Beak shape (curvature):	slightly curved
Shoulder	narrow
Shoulder	slightly sloping

#### Lower Lemma

Beak shape:	slightly curved
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#### Grain

Colour	red
Colouration with phenol:	medium

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	weak
Flag leaf - blade (lower side):	absent or very weak
Culm neck:	absent or very weak
Ear - Glaucosity:	absent or very weak

#### Plant growth characters

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	intermediate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak

## WINTER WHEAT

# BELEPI

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	long to very long
Density:	medium
Shape (side profile)	parallel
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness:	weak
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	strong - group 3
Beak length:	
Beak shape (curvature):	
Shoulder	straight
Shoulder	

#### Lower Lemma

Beak shape:	straight to slightly curved
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#### Grain

Colour	red
Colouration with phenol:	dark to very dark

#### Straw

Length:	medium
Wall thickness @ 20cms below ear:	thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	strong to very strong
Culm neck:	strong to very strong
Ear - Glaucosity:	strong to very strong

#### Plant growth characters

Coleoptile-anthocyanin	weak
Plant - growth habit:	intermediate to semi-prostrate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	

## WINTER WHEAT

AFP 1/2293

## BELGRADE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	rough
Extent of internal hairs	strong (3)
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**BELUGA****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2386

# BENNINGTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	



**BISCAY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	very weak

## WINTER WHEAT

# BOOMER

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium
Density:	medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	strong -group 3
Beak length:	short
Beak shape (curvature):	moderately curved
Shoulder	narrow
Shoulder	elevated

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	dark

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	strong
Culm neck:	strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	strong
Plant - growth habit:	semi-prostrate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	

## WINTER WHEAT

AFP 1/2325

# BRIDGEHEAD

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (3)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**BRITANNIA****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	lax
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium (1+)
Beak length	medium to long
Beak curvature	strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1502

# BROMPTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	absent or very weak

**BUTLER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	strong (3)
Beak length	short
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	absent or very weak
Flag leaf- blade (lower side)	absent or very weak
Culm - neck	absent or very weak
Ear	absent or very weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

# BYSTRA

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	short to medium
Density:	medium to dense
Shape (side profile)	parallel sided
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness:	strong
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak - group 1
Beak length:	very short
Beak shape (curvature):	slightly curved
Shoulder	narrow
Shoulder	slightly sloping

#### Lower Lemma

Beak shape:	slightly curved
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#### Grain

Colour	red
Colouration with phenol:	light to medium

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	strong
Culm neck:	strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	weak
Plant - growth habit:	semi-erect
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak

## WINTER WHEAT

AFP 1/2160

# CAMBRIDGE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	



**CASSIUS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium to long
Beak curvature	moderate to strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**CHEVRON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (group 1+)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1980

# CHILTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	tip only
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**CHRONICLE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	strongly elevated with 2nd pt.

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1070

# CLAIRE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong to very strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak

**COCOON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1813

# CONQUEROR

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**CONSORT****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak



**CORDIALE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	short
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	straight

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	medium to long
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	absent or very weak

**CORONATION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium to strong - Group 2+
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**COSTELLO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium (1+)
Beak length	short
Beak curvature	strongly curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**COUGAR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2210

## CREEK

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	short
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	straight

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## CRUSOE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium to strong - Group 2+
Beak length	short to medium
Beak curvature	slight to moderately curved
Shoulder width	medium to broad
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	absent or very weak
Flag leaf- blade (lower side)	absent or very weak
Culm - neck	absent or very weak
Ear	absent or very weak

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**CUBANITA****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1220

## DEBEN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak



## WINTER WHEAT

AFP 1/2023

# DELPHI

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium to strong - Group 2+
Beak length	medium to long
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1895

# DENMAN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**DEXTER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	geniculate
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2031

# DICKENS

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2462

# DRUMLIN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	very short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2382

# DUNSTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1725

# DUXFORD

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	strongly elevated with 2nd pt.

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak
Culm - neck	medium
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

# EDGAR

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	long
Density:	lax
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	weak to medium
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak - group 1
Beak length:	very short to short
Beak shape (curvature):	strongly curved
Shoulder	narrow
Shoulder	straight to elevated

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	dark

#### Straw

Length:	medium
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	strong
Culm neck:	strong to very strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	very weak to weak
Plant - growth habit:	intermediate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	



**EDMUNDS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	strong (3)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	weak to medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1376

# EINSTEIN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	short
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	medium

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	absent or very weak

**ENERGISE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**EVOLUTION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved to geniculate
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1213

# EXSEPT

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	tip only
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	straight

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-prostrate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/1890

# FAIRWAY

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	
Awns or scurs - length	very short to short
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	
Extent of internal hairs	weak to medium (group 1+)
Beak length	short
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	slightly sloping

#### Lower lemma

Beak curvature	
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-prostrate to prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

## FLORETT

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	short to medium
Density:	medium to dense
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak to medium - group 1 to 2
Beak length:	very short to short
Beak shape (curvature):	moderately curved
Shoulder	narrow
Shoulder	slightly sloping to straight

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	dark

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	weak to medium
Culm neck:	medium to strong
Ear - Glaucosity:	medium

#### Plant growth characters

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	intermediate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	

**FOREST****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	very thick or filled

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	



**FORZOR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak to medium
Culm - neck	weak to medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2383

# FREISTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	long
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

Variety Name: **Frontal**

**Crop:**

**Breeder's Reference:**

**AFP No:**

**Breeder:**

**Translated from:** Dutch

**Origin:**

**Date:** 24 March 2015

**Code:** FRNT

**Coleoptile-anthocyanin colouration:**

Absent or very weak

\*Plant - growth habit:

Intermediate to semi prostrate

\*Time ear emergence:

Medium

**Flag leaf - Anthocyanin colouration of auricles:**

**Frequency of plants with recurved flag leaves:**

Low to medium

\*Flag leaf - Glaucosity of sheath:

Strong to very strong

**Flag leaf - Glaucosity of leaf blade:**

Strong

**Anthers - anthocyanin colouration:**

**Glaucosity of neck:**

Strong to very strong

**Hairiness of uppermost node:**

\*Plant - height:

Medium

\*Straw - wall thickness @ 20cms below ear:

Very thin

\*Ear - Glaucosity:

Strong to very strong

**Ear - Supernumerary spikelets - frequency:**

\*Ear - Colour:

White

\*Ear - Shape (side profile):

Tapering

**Ear - Length:**

Short to medium

\*Ear - Density:

Medium to dense

\*Awns or scurs - presence:

Present

**Awns or scurs - distribution:**

\*Scurs at tip of ear - length:

\*Awns at tip of ear - length:

Medium

**Lower glume - Beak length:**

Medium

**Lower glume - Beak shape (curvature):**

**Lower glume - Beak tip:**

**Lower glume - Shoulder width:**

Medium

**Lower glume - Shoulder type:**

Elevated

**Lower glume - External surface roughness:**

**Lower glume - Extent of internal hairs:**

**Lower glume - Internal imprint:**

**Lower lemma - Beak shape:**

Moderately curved

**Lower lemma - Beak length-:**

Medium

**Lower lemma - Beak swelling:**

**Apical rachis segment - convex face hairiness:**

Medium to strong

\*Grain - colour:

Red

**Grain - Shape:**

**Grain - Brush hair length in dorsal view:**

**Grain - Colouration with phenol:**

Medium to dark

\*Seasonal type:

Winter

**Extra characters:**

\* = Characteristics which should always be included in the description of the variety.

30 March 2015

## WINTER WHEAT

AFP 1/1769

# GALLANT

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	straight to slightly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

Variety Name: **Genius**

Crop: Winter Wheat

**Breeder's Reference:**

**AFP No:**

**Breeder:** Nordsaat Saatzuchtgesellschaft

**Translated from:** German

**Origin:**

**Date:** 08 October 2010

**Code:** GENI

<b>Coleoptile-anthocyanin colouration:</b>	absent or very weak
<b>*Plant - growth habit:</b>	intermediate
<b>*Time ear emergence:</b>	medium
<b>Flag leaf - Anthocyanin colouration of auricles:</b>	
<b>Frequency of plants with recurved flag leaves:</b>	very low to low
<b>*Flag leaf - Glaucosity of sheath:</b>	strong
<b>Flag leaf - Glaucosity of leaf blade:</b>	medium to strong
<b>Anthers - anthocyanin colouration:</b>	
<b>Glaucosity of neck:</b>	medium to strong
<b>Hairiness of uppermost node:</b>	
<b>*Plant - height:</b>	short to medium
<b>*Straw - wall thickness @ 20cms below ear:</b>	very thin
<b>*Ear - Glaucosity:</b>	weak to medium
<b>Ear - Supernumerary spikelets - frequency:</b>	
<b>*Ear - Colour:</b>	white
<b>*Ear - Shape (side profile):</b>	tapering
<b>Ear - Length:</b>	medium to long
<b>*Ear - Density:</b>	lax to medium
<b>*Awns or scurs - presence:</b>	scurs present
<b>Awns or scurs - distribution:</b>	
<b>*Scurs at tip of ear - length:</b>	short
<b>*Awns at tip of ear - length:</b>	
<b>Lower glume - Beak length:</b>	short
<b>Lower glume - Beak shape (curvature):</b>	moderately curved
<b>Lower glume - Beak tip:</b>	
<b>Lower glume - Shoulder width:</b>	narrow
<b>Lower glume - Shoulder type:</b>	straight to elevated
<b>Lower glume - External surface roughness:</b>	
<b>Lower glume - Extent of internal hairs:</b>	weak - group 1
<b>Lower glume - Internal imprint:</b>	
<b>Lower lemma - Beak shape:</b>	
<b>Lower lemma - Beak length-:</b>	
<b>Lower lemma - Beak swelling:</b>	
<b>Apical rachis segment - convex face hairiness:</b>	strong
<b>*Grain - colour:</b>	red
<b>Grain - Shape:</b>	
<b>Grain - Brush hair length in dorsal view:</b>	
<b>Grain - Colouration with phenol:</b>	medium to dark
<b>*Seasonal type:</b>	winter
<b>Extra characters:</b>	

\* = Characteristics which should always be included in the description of the variety.

30 March 2015

**GLADIATOR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	
Extent of internal hairs	medium - Group 2
Beak length	short
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	early
Flag leaf - anthocyanin of auricles	absent or very weak

**GLASGOW****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	straight

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	very early to early
Flag leaf - anthocyanin of auricles	absent or very weak

**GOLDENGUN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elev. to elev with 2nd point

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong to very strong
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/1811

# GRAFTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	moderate to strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

Variety Name: **Graham**

Crop:

Breeder's Reference:

AFP No:

Breeder: Syngenta Seeds SAS

Translated from: French

Origin:

Date: 03 November 2014

Code: GRAH

**Coleoptile-anthocyanin colouration:**

Absent or very weak

\*Plant - growth habit:

Intermediate to semi prostrate

\*Time ear emergence:

Medium to late

**Flag leaf - Anthocyanin colouration of auricles:**

**Frequency of plants with recurved flag leaves:**

\*Flag leaf - Glaucosity of sheath:

Strong to very strong

**Flag leaf - Glaucosity of leaf blade:**

Strong to very strong

**Anthers - anthocyanin colouration:**

**Glaucosity of neck:**

**Hairiness of uppermost node:**

\*Plant - height:

Short to medium

\*Straw - wall thickness @ 20cms below ear:

Very thin

\*Ear - Glaucosity:

Strong to very strong

**Ear - Supernumerary spikelets - frequency:**

\*Ear - Colour:

White

\*Ear - Shape (side profile):

Parallel sided

**Ear - Length:**

Long to very long

\*Ear - Density:

Medium to dense

\*Awns or scurs - presence:

Present

**Awns or scurs - distribution:**

\*Scurs at tip of ear - length:

Very short

\*Awns at tip of ear - length:

**Lower glume - Beak length:**

Short

**Lower glume - Beak shape (curvature):**

Slightly curved

**Lower glume - Beak tip:**

**Lower glume - Shoulder width:**

Narrow

**Lower glume - Shoulder type:**

Straight or elevated

**Lower glume - External surface roughness:**

**Lower glume - Extent of internal hairs:**

Weak

**Lower glume - Internal imprint:**

**Lower lemma - Beak shape:**

Slightly curved

**Lower lemma - Beak length-:**

Short

**Lower lemma - Beak swelling:**

**Apical rachis segment - convex face hairiness:**

Weak

\*Grain - colour:

Red

**Grain - Shape:**

**Grain - Brush hair length in dorsal view:**

Medium

**Grain - Colouration with phenol:**

\*Seasonal type:

Winter

**Extra characters:**

\* = Characteristics which should always be included in the description of the variety.

31 March 2015

## WINTER WHEAT

AFP 1/1940

# GRAVITAS

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**HAMPDEN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2085

# HAVANA

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**HEREFORD****CHARACTERS IN DETAIL****Ear**

Colour:	white
Length:	short to medium
Density:	medium to dense
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or Scurs - length:	long to very long
Apical rachis segment - convex face hairiness:	strong
Anthers - anthocyanin	

**Lower Glume**

External surface roughness:	
Extent of internal hairs:	strong - group 3
Beak length:	medium
Beak shape (curvature):	strongly curved
Shoulder	medium
Shoulder	elevated

**Lower Lemma**

Beak shape:	strongly curved
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**Grain**

Colour	red
Colouration with phenol:	medium to dark

**Straw**

Length:	medium
Wall thickness @ 20cms below ear:	thin

**Glaucosity**

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	strong to very strong
Culm neck:	strong
Ear - Glaucosity:	strong

**Plant growth characters**

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	intermediate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	

## WINTER WHEAT

AFP 1/736

# HEREWARD

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	very short to short
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	entire external surface rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	slightly curved
Shoulder width	broad to very broad
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

## HEROLDO

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium to long
Density:	medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	strong - group 3
Beak length:	short to medium
Beak shape (curvature):	straight
Shoulder	narrow
Shoulder	straight to elevated

#### Lower Lemma

Beak shape:

#### Grain

Colour	white
Colouration with phenol:	light to medium

#### Straw

Length:	short to medium
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	strong to very strong
Culm neck:	strong to very strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	semi-prostrate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	



**HORATIO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper 1/2
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**HUMBER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	medium to broad
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	

**HYPERION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	medium (2)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	absent or very weak

**ICEBREAKER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2129

## ICON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1853

# INVICTA

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	tip only
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**ISTABRAQ****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect
Time of ear emergence	very early to early
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/1737

# JB DIEGO

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	tip only
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	short
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	



**JELLCOE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**JORVIK****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	straight

**Lower lemma**

Beak curvature	geniculate
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1765

# KETCHUM

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium to long
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**KINGDOM****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	tip only
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	medium to long
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**KIPLING****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	dense to very dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	
Culm - neck	medium
Ear	weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

## KRIS

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	short to medium
Density:	medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	strong - group 3
Beak length:	short to medium
Beak shape (curvature):	slightly curved
Shoulder	medium
Shoulder	straight to elevated

#### Lower Lemma

Beak shape:	slightly curved
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#### Grain

Colour	red
Colouration with phenol:	medium to dark

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	medium to strong
Culm neck:	strong
Ear - Glaucosity:	strong

#### Plant growth characters

Coleoptile-anthocyanin	medium to strong
Plant - growth habit:	semi-prostrate to prostrate
Time ear emergence:	late
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak

**KWS BARREL****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	strong (3)
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**KWS BASSET****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (group 1+)
Beak length	long
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/2115

# KWS BONHAM

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**KWS CASHEL****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong
Beak length	medium to long
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	weak
Flag leaf- blade (lower side)	very weak to weak
Culm - neck	weak
Ear	weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2080

# KWS CHILOE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns of scurs - distribution	whole length
Awns or scurs - length:	very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	long to very long
Beak curvature	slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	very light to light

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS CLEVELAND****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS CONROS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium (group 1+)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**KWS CRISPIN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**KWS CROFT****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1976

# KWS CROSBY

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong to very strong
Ear	strong to very strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/2114

# KWS DALI

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2120

# KWS EVOKE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS EVOLVE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1977

# KWS GATOR

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2316

# KWS HARLYN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	very weak to weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	rough
Extent of internal hairs	medium (2)
Beak length	short to medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	very short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**KWS HORIZON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2116

# KWS KENTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	weak to medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2420

# KWS KERRIN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	very short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak to medium
Culm - neck	weak to medium
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	



**KWS KIELDER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**KWS LEON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium (1+)
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**KWS LILI****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1972

# KWS LUMOS

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1908

# KWS MADRYN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS MOJITO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

Variety Name: **KWS Montana**

Crop: Winter wheat

Breeder's Reference: KW 8027-3-08

AFP No:

Breeder: KWS LOCHOW GMBH

Translated from: German

Origin:

Date: 22 March 2016

Code: KWMON

<b>Coleoptile-anthocyanin colouration:</b>	Medium
<b>*Plant - growth habit:</b>	Semi prostrate
<b>*Time ear emergence:</b>	Late
<b>Flag leaf - Anthocyanin colouration of auricles:</b>	Absent or very low
<b>Frequency of plants with recurved flag leaves:</b>	Strong
<b>*Flag leaf - Glaucosity of sheath:</b>	Strong
<b>Flag leaf - Glaucosity of leaf blade:</b>	Strong
<b>Anthers - anthocyanin colouration:</b>	Strong to very strong
<b>Glaucosity of neck:</b>	Strong to very strong
<b>Hairiness of uppermost node:</b>	Strong to very strong
<b>*Plant - height:</b>	Short to medium
<b>*Straw - wall thickness @ 20cms below ear:</b>	Absent or very thin
<b>*Ear - Glaucosity:</b>	Strong
<b>Ear - Supernumerary spikelets - frequency:</b>	Strong
<b>*Ear - Colour:</b>	White
<b>*Ear - Shape (side profile):</b>	Parallel sided
<b>Ear - Length:</b>	Medium
<b>*Ear - Density:</b>	Medium
<b>*Awns or scurs - presence:</b>	Scurs present
<b>Awns or scurs - distribution:</b>	Scurs present
<b>*Scurs at tip of ear - length:</b>	Very short
<b>*Awns at tip of ear - length:</b>	Very short
<b>Lower glume - Beak length:</b>	Very short to short
<b>Lower glume - Beak shape (curvature):</b>	Straight to slightly curved
<b>Lower glume - Beak tip:</b>	Straight to slightly curved
<b>Lower glume - Shoulder width:</b>	Medium
<b>Lower glume - Shoulder type:</b>	Slightly sloping to straight
<b>Lower glume - External surface roughness:</b>	Slightly sloping to straight
<b>Lower glume - Extent of internal hairs:</b>	Very weak to weak
<b>Lower glume - Internal imprint:</b>	Very weak to weak
<b>Lower lemma - Beak shape:</b>	Very weak to weak
<b>Lower lemma - Beak length-:</b>	Very weak to weak
<b>Lower lemma - Beak swelling:</b>	Very weak to weak
<b>Apical rachis segment - convex face hairiness:</b>	Strong to very strong
<b>*Grain - colour:</b>	Red
<b>Grain - Shape:</b>	Red
<b>Grain - Brush hair length in dorsal view:</b>	Red
<b>Grain - Colouration with phenol:</b>	Medium to dark
<b>*Seasonal type:</b>	Winter
<b>Extra characters:</b>	Winter

\* = Characteristics which should always be included in the description of the variety.

23 March 2016



## WINTER WHEAT

AFP 1/2240

# KWS MOZART

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	



**KWS PODIUM****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong to very strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2078

# KWS ROWAN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ½
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1916

# KWS SANTIAGO

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	very short to short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1971

# KWS SAXTEAD

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns of scurs - distribution	whole length
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	strong - Group 3
Beak length	long
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong to very strong
Ear	strong to very strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS SILVERSTONE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**KWS SISKIN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium (1+)
Beak length	short to medium
Beak curvature	slight to moderately curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**KWS SOLO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1880

# KWS STERLING

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns of scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/1911

# KWS TARGET

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**KWS TEMPO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium
Beak length	short to medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	geniculate
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**KWS TRINITY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium
Beak length	medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**KWS TROMMEL****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow to medium
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2082

# KWS YARIS

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium to long
Density:	medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness:	medium to strong
Anthers - anthocyanin colouration	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	strong - group 3
Beak length:	long
Beak shape (curvature):	strongly curved
Shoulder	medium
Shoulder	elevated

#### Lower Lemma

Beak shape:	strongly curved
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#### Grain

Colour	red
Colouration with phenol:	medium to dark

#### Straw

Length:	medium
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	very strong
Culm neck:	strong to very strong
Ear - Glaucosity:	strong to very strong

#### Plant growth characters

Coleoptile-anthocyanin	absent or very weak
Plant - growth habit:	semi-prostrate
Time ear emergence:	late
Flag leaf - Anthocyanin colouration of auricles:	

**KWS ZYATT****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	rough
Extent of internal hairs	strong (group 3)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	very short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2113

# LANCASTER

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	weak to medium
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1756

# LANGDALE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	rough
Extent of internal hairs	medium (2)
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved to geniculate
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/1790

# LEAR

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium to long
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2081

# LEEDS

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**LG BLETCHLEY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (group 1+)
Beak length	medium to long
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**LG CASSIDY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	absent or very weak
Flag leaf- blade (lower side)	absent or very weak
Culm - neck	absent or very weak
Ear	absent or very weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2451

# LG MOTOWN

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	strong (group 3)
Beak length	short to medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2454

# LG NASHVILLE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	absent or very weak
Flag leaf- blade (lower side)	absent or very weak
Culm - neck	absent or very weak
Ear	absent or very weak

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**LG SUNDANCE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

## MAGISTER

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium
Density:	lax to medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak to medium -group 1 to 2
Beak length:	short
Beak shape (curvature):	moderately curved
Shoulder	medium to broad
Shoulder	straight

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	dark

#### Straw

Length:	medium to long
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	strong
Culm neck:	strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	weak
Plant - growth habit:	semi-prostrate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	



**MARIBOSS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	very weak to weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	strong
Ear	very weak to weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	early
Flag leaf - anthocyanin of auricles	

**MARIS HUNTSMAN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	entire external surface rough
Extent of internal hairs	weak to medium (group 1+)
Beak length	medium to long
Beak curvature	slightly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	long to very long
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	weak

**MARIS WIDGEON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	very lax to lax
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak - Group 1
Beak length	medium
Beak curvature	v.slightly curved
Shoulder width	narrow to medium
Shoulder shape	straight

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very long
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	weak

## WINTER WHEAT

AFP 1/2380

# MARSTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	strongly curved to geniculate
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved to geniculate
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**MONROE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	very short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2022

# MONTEREY

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**MOSAIC****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	strong (3)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2385

# MOULTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium (group 2)
Beak length	short to medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	



**MYRIAD****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1192

# NELSON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	straight

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	strong to very strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/1658

# OAKLEY

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium to strong - Group 2+
Beak length	medium to long
Beak curvature	moderate to strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

# OLIVIN

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium
Density:	medium
Shape (side profile)	parallel sided
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	medium to strong
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	medium - group 2
Beak length:	very short to short
Beak shape (curvature):	strongly curved
Shoulder	narrow to medium
Shoulder	slightly sloping to straight

#### Lower Lemma

Beak shape:	strongly curved to geniculate
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#### Grain

Colour	red
Colouration with phenol:	medium to dark

#### Straw

Length:	medium to long
Wall thickness @ 20cms below ear:	thin

#### Glaucosity

Flag leaf - sheath:	strong
Flag leaf - blade (lower side):	medium
Culm neck:	medium
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	strong to very strong
Plant - growth habit:	intermediate to semi-prostrate
Time ear emergence:	late
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak

**OLYMPUS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**ORATOR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	medium to long
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium to strong
Ear	weak to medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**ORBIT****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	absent or very weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong to very strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2157

# PANACEA

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	



**PANORAMA****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	short to medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	weak to medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2158

# PHILOSOPHER

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

## PIRENEO

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	medium
Density:	medium to dense
Shape (side profile)	tapering
Awns or scurs - presence:	awns present
Awns or scurs - distribution:	
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness:	medium
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	medium - group 2
Beak length:	long to very long
Beak shape (curvature):	slightly curved
Shoulder	narrow
Shoulder	straight

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	medium

#### Straw

Length:	medium
Wall thickness @ 20cms below ear:	thin

#### Glaucosity

Flag leaf - sheath:	weak
Flag leaf - blade (lower side):	very weak to weak
Culm neck:	weak to medium
Ear - Glaucosity:	weak

#### Plant growth characters

Coleoptile-anthocyanin	
Plant - growth habit:	intermediate
Time ear emergence:	early to late
Flag leaf - Anthocyanin colouration of auricles:	

Variety Name: **PRAKTIK**

**Crop:**

**Breeder's Reference:**

**AFP No:** 1/

**Breeder:** RAGT

**Translated from:**

**Origin:** GERMANY

**Date:** 22 October 2012

**Code:** PRAK

**Coleoptile-anthocyanin colouration:**

ABSENT OR VERY WEAK  
INTERMEDIATE TO SEMI-PROSTRATE  
MEDIUM TO LATE

\*Plant - growth habit:

\*Time ear emergence:

Flag leaf - Anthocyanin colouration of auricles:

Frequency of plants with recurved flag leaves:

ABSENT OR VERY LOW

\*Flag leaf - Glaucosity of sheath:

MEDIUM

Flag leaf - Glaucosity of leaf blade:

MEDIUM

Anthers - anthocyanin colouration:

Glaucosity of neck:

MEDIUM TO STRONG

Hairiness of uppermost node:

\*Plant - height:

SHORT

\*Straw - wall thickness @ 20cms below ear:

very thin

\*Ear - Glaucosity:

MEDIUM

Ear - Supernumerary spikelets - frequency:

\*Ear - Colour:

WHITE

\*Ear - Shape (side profile):

TAPERING

Ear - Length:

SHORT TO MEDIUM

\*Ear - Density:

MEDIUM

\*Awns or scurs - presence:

SCURS PRESENT

Awns or scurs - distribution:

\*Scurs at tip of ear - length:

VERY SHORT TO SHORT

\*Awns at tip of ear - length:

Lower glume - Beak length:

VERY SHORT TO SHORT

Lower glume - Beak shape (curvature):

STRAIGHT

Lower glume - Beak tip:

SLIGHTLY CURVED

Lower glume - Shoulder width:

NARROW TO MEDIUM

Lower glume - Shoulder type:

Lower glume - External surface roughness:

Lower glume - Extent of internal hairs:

MEDIUM

Lower glume - Internal imprint:

Lower lemma - Beak shape:

Lower lemma - Beak length-:

Lower lemma - Beak swelling:

Apical rachis segment - convex face hairiness:

MEDIUM

\*Grain - colour:

RED

Grain - Shape:

Grain - Brush hair length in dorsal view:

Grain - Colouration with phenol:

DARK

\*Seasonal type:

WINTER TYPE

Extra characters:

STRAW: PILTH IN CROSS SECTION -  
VERY THIN

\* = Characteristics which should always be included in the description of the variety.

30 March 2015

## WINTER WHEAT

AFP 1/2033

# QI

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	absent or very weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium to strong - Group 2+
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	medium

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

## RA3W 08

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	short to medium
Density:	medium to dense
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness:	weak to medium
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	medium
Extent of internal hairs:	medium - group 2
Beak length:	medium
Beak shape (curvature):	moderately curved
Shoulder	broad
Shoulder	elevated

#### Lower Lemma

Beak shape:	moderately curved to strongly curved
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#### Grain

Colour	red
Colouration with phenol:	medium to dark

#### Straw

Length:	short to medium
Wall thickness @ 20cms below ear:	thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	medium to strong
Culm neck:	weak
Ear - Glaucosity:	medium

#### Plant growth characters

Coleoptile-anthocyanin	medium
Plant - growth habit:	intermediate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	

**RAMSAY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	short
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

## RAPSODIA

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	short to medium
Density:	medium
Shape (side profile)	tapering
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	short
Apical rachis segment - convex face hairiness:	weak to medium
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	smooth
Extent of internal hairs:	medium to strong - group 2 to 3
Beak length:	short
Beak shape (curvature):	moderately curved
Shoulder	medium
Shoulder	straight

#### Lower Lemma

Beak shape:	slightly curved
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#### Grain

Colour	red
Colouration with phenol:	medium

#### Straw

Length:	short
Wall thickness @ 20cms below ear:	very thin to thin

#### Glaucosity

Flag leaf - sheath:	strong to very strong
Flag leaf - blade (lower side):	medium to strong
Culm neck:	medium to strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	strong
Plant - growth habit:	semi-prostrate to prostrate
Time ear emergence:	medium
Flag leaf - Anthocyanin colouration of auricles:	absent or very weak



## WINTER WHEAT

AFP 1/1994

# RAZZANO

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs – distribution	
Awns or scurs - length:	very short
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	
Extent of internal hairs	medium to strong - Group 2+
Beak length	short
Beak curvature	v.slightly curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**REFLECTION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 3/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**RELAY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**REVELATION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2266

# RGT ADVENTURE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**RGT CONVERSION****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium
Beak length	long
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	weak to medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**RGT ILLUSTRIOUS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	rough
Extent of internal hairs	medium to strong (2+)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**RGT KNIGHTSBRIDGE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	



**RGT MARLBOROUGH****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	medium to long
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	straight to elevated

**Lower lemma**

Beak curvature	moderately to strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**RGT PADDINGTON****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium to strong (group 2+)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	very short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**RGT PEMBROKE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	very weak to weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	very short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**RGT SACRAMENTO****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	long to very long
Beak curvature	slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	slightly sloping

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	light

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**RGT SCRUMMAGE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2268

# RGT SORCERER

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	
Awns or scurs - length	n/a
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	long
Beak curvature	moderate to strongly curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2367

# RGT WESTMINSTER

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	INVALID CHARACTER STATE!
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	rough
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	very short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

**RIBAND****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak (1)
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak
Culm - neck	medium
Ear	weak to medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	prostrate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	absent or very weak



**ROADSTER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	
Awns or scurs - length	n/a
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	long to very long
Beak curvature	moderately curved
Shoulder width	very narrow to narrow
Shoulder shape	straight

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	light

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**ROBIGUS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	short to medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	weak

## WINTER WHEAT

AFP 1/2211

# ROYSTON

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	short to medium
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	geniculate
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	weak to medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**RUSKIN****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium
Beak length	short to medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	medium to dark

**Straw**

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1649

# SAHARA

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	medium

#### Straw

Length	medium to long
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak
Culm - neck	weak
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2406

# SAVELLO

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long to very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1787

# SCOUT

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	straight to slightly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2068

# SCRIBE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/2404

# SHABRAS

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	strong (group 3)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	strongly elevated with 2nd pt. present

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

**SHEPHERD****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**SHERLOCK****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	very weak to weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	long to very long
Beak curvature	moderate to strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1951

## SHIRE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	weak to medium (1+)
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**SKYFALL****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length:	very long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	long to very long
Beak curvature	v.slightly curved
Shoulder width	very narrow to narrow
Shoulder shape	elev. to elev with 2nd point

**Lower lemma**

Beak curvature	straight
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**Grain**

Colour	red
Colouration with phenol	dark to very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**SMUGGLER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	entire external surface rough
Extent of internal hairs	weak to medium (group 1+)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	slightly to moderately curved
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**Grain**

Colour	red
Colouration with phenol	light to medium

**Straw**

Length	medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	very strong
Plant - growth habit	intermediate
Time of ear emergence	early
Flag leaf - anthocyanin of auricles	absent or very weak

**SOISSONS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	absent to weak
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak - Group 1
Beak length	
Beak curvature	
Shoulder width	narrow
Shoulder shape	slightly sloping

**Lower lemma**

Beak curvature	straight
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**Grain**

Colour	red
Colouration with phenol	

**Straw**

Length	
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	absent or very weak
Flag leaf- blade (lower side)	weak
Culm - neck	absent or very weak
Ear	absent or very weak

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermediate
Time of ear emergence	very early to early
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/2132

# SOLACE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	



**SOLSTICE****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	lax to medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	straight

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	very short to short
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	
Culm - neck	strong to very strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	very weak

## WINTER WHEAT

AFP 1/2178

# SOLTEK

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	dense
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	strong to very strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

Variety Name: **SORRIAL**

Crop: **WINTER WHEAT**

**Breeder's Reference:**

**AFP No:**

**Breeder:** CAUSSADE SEMENCES SA

**Translated from:**

**Origin:** FRANCE

**Date:** 03 June 2013

**Code:** SORRI

**Coleoptile-anthocyanin colouration:**

MEDIUM

\*Plant - growth habit:

INTERMEDIATE TO SEMI-PROSTRATE

\*Time ear emergence:

EARLY TO MEDIUM

**Flag leaf - Anthocyanin colouration of auricles:**

VERY LOW TO LOW

**Frequency of plants with recurved flag leaves:**

VERY STRONG

\*Flag leaf - Glaucosity of sheath:

STRONG TO VERY STRONG

**Flag leaf - Glaucosity of leaf blade:**

**Anthers - anthocyanin colouration:**

STRONG TO VERY STRONG

**Glaucosity of neck:**

**Hairiness of uppermost node:**

SHORT

\*Plant - height:

VERY THIN

\*Straw - wall thickness @ 20cms below ear:

STRONG TO VERY STRONG

\*Ear - Glaucosity:

**Ear - Supernumerary spikelets - frequency:**

WHITE

\*Ear - Colour:

PARALLEL SIDED

\*Ear - Shape (side profile):

MEDIUM TO LONG

**Ear - Length:**

DENSE

\*Ear - Density:

SCURS PRESENT

\*Awns or scurs - presence:

**Awns or scurs - distribution:**

VERY SHORT TO SHORT

\*Scurs at tip of ear - length:

\*Awns at tip of ear - length:

**Lower glume - Beak length:**

**Lower glume - Beak shape (curvature):**

MEDIUM TO BROAD

**Lower glume - Beak tip:**

STRAIGHT

**Lower glume - Shoulder width:**

**Lower glume - Shoulder type:**

**Lower glume - External surface roughness:**

WEAK

**Lower glume - Extent of internal hairs:**

**Lower glume - Internal imprint:**

SLIGHTLY CURVED

**Lower lemma - Beak shape:**

SHORT

**Lower lemma - Beak length-:**

**Lower lemma - Beak swelling:**

WEAK TO MEDIUM

**Apical rachis segment - convex face hairiness:**

RED

\*Grain - colour:

**Grain - Shape:**

MEDIUM

**Grain - Brush hair length in dorsal view:**

WINTER

**Grain - Colouration with phenol:**

\*Seasonal type:

**Extra characters:**

\* = Characteristics which should always be included in the description of the variety.

30 March 2015

**SPYDER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	medium

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1941

# STIGG

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	very dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	medium to dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong to very strong
Culm - neck	strong
Ear	absent or very weak

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2447

# STRATOSPHERE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium (group 2)
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark to very dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak
Culm - neck	medium
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late to very late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2001

## SY EPSON

### CHARACTERS IN DETAIL

#### Ear

Colour:	white
Length:	long
Density:	lax to medium
Shape (side profile)	parallel sided
Awns or scurs - presence:	scurs present
Awns or scurs - distribution:	
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness:	very weak
Anthers - anthocyanin	

#### Lower Glume

External surface roughness:	
Extent of internal hairs:	weak to medium - group 1 to 2
Beak length:	short to medium
Beak shape (curvature):	slightly to moderately curved
Shoulder	narrow to medium
Shoulder	slightly sloping or straight

#### Lower Lemma

Beak shape:

#### Grain

Colour	red
Colouration with phenol:	medium

#### Straw

Length:	
Wall thickness @ 20cms below ear:	very thin

#### Glaucosity

Flag leaf - sheath:	medium to strong
Flag leaf - blade (lower side):	medium
Culm neck:	medium to strong
Ear - Glaucosity:	medium to strong

#### Plant growth characters

Coleoptile-anthocyanin	absent to very weak
Plant - growth habit:	semi-prostrate
Time ear emergence:	medium to late
Flag leaf - Anthocyanin colouration of auricles:	

## WINTER WHEAT

AFP 1/1806

# TIMARU

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	long
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	tip only
Awns or scurs - length:	very short
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	



## WINTER WHEAT

AFP 1/1986

# TORCH

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium
Apical rachis segment - convex face hairiness	absent or very weak
Anthers - anthocyanin colouration	

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	medium

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

**TORPHINS****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short to medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	

**Lower glume**

External surface	rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong to very strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1954

# TUXEDO

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2125

# TWISTER

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ½
Awns or scurs - length:	long to very long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium to long
Beak curvature	moderate to strongly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/2206

# UNIVERSAL

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	medium to long
Beak curvature	strongly curved
Shoulder width	medium
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium to strong
Culm - neck	medium to strong
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

**VELOCITY****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	tip only
Awns or scurs - length	short to medium
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	smooth
Extent of internal hairs	medium (group 2)
Beak length	medium to long
Beak curvature	strongly curved to geniculate
Shoulder width	medium to broad
Shoulder shape	strongly elevated with 2nd pt. present

**Lower lemma**

Beak curvature	geniculate
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**Grain**

Colour	red
Colouration with phenol	dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	absent or very thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

**Plant growth characters**

Coleoptile - anthocyanin colouration	weak
Plant - growth habit	intermediate
Time of ear emergence	early to medium
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1812

# VISCOUNT

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	medium to long
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	moderately curved
Shoulder width	medium
Shoulder shape	elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	very short to short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium to strong
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	strong
Plant - growth habit	semi-erect to intermediate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	

Variety Name: **Vulkan**

Crop: Winter Wheat

**Breeder's Reference:**

**AFP No:**

**Breeder:** Poljoprivredni Institut Osijek

**Translated from:** Croatian

**Origin:**

**Date:** 11 March 2014

**Code:** VULK

**Coleoptile-anthocyanin colouration:**

**\*Plant - growth habit:**

Semi erect to intermediate

**\*Time ear emergence:**

Very early to early

**Flag leaf - Anthocyanin colouration of auricles:**

**Frequency of plants with recurved flag leaves:**

Low

**\*Flag leaf - Glaucosity of sheath:**

Medium

**Flag leaf - Glaucosity of leaf blade:**

Very weak to weak

**Anthers - anthocyanin colouration:**

**Glaucosity of neck:**

Weak to medium

**Hairiness of uppermost node:**

**\*Plant - height:**

Medium

**\*Straw - wall thickness @ 20cms below ear:**

Very thick or filled

**\*Ear - Glaucosity:**

**Ear - Supernumerary spikelets - frequency:**

**\*Ear - Colour:**

White

**\*Ear - Shape (side profile):**

Parallel sided

**Ear - Length:**

Very short

**\*Ear - Density:**

Medium

**\*Awns or scurs - presence:**

Present

**Awns or scurs - distribution:**

**\*Scurs at tip of ear - length:**

Medium

**\*Awns at tip of ear - length:**

Medium

**Lower glume - Beak length:**

Long to very long

**Lower glume - Beak shape (curvature):**

Slightly curved

**Lower glume - Beak tip:**

**Lower glume - Shoulder width:**

Absent or very narrow

**Lower glume - Shoulder type:**

Sloping

**Lower glume - External surface roughness:**

**Lower glume - Extent of internal hairs:**

Medium

**Lower glume - Internal imprint:**

**Lower lemma - Beak shape:**

**Lower lemma - Beak length-:**

**Lower lemma - Beak swelling:**

**Apical rachis segment - convex face hairiness:**

Medium

**\*Grain - colour:**

Red

**Grain - Shape:**

**Grain - Brush hair length in dorsal view:**

**Grain - Colouration with phenol:**

**\*Seasonal type:**

Winter

**Extra characters:**



**WARRIOR****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	short
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/4
Awns or scurs - length	medium to long
Apical rachis segment - convex face hairiness	weak to medium
Anthers - anthocyanin colouration	absent

**Lower glume**

External surface	slightly rough
Extent of internal hairs	weak to medium - Group 1+
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow to medium
Shoulder shape	elevated

**Lower lemma**

Beak curvature	moderately curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	n/a

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	medium
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	medium to strong
Plant - growth habit	semi-erect
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

**WEAVER****CHARACTERS IN DETAIL****Ear**

Colour	white
Length	medium to long
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper ¼
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	strong
Anthers - anthocyanin colouration	

**Lower glume**

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	strongly curved
Shoulder width	narrow
Shoulder shape	elevated

**Lower lemma**

Beak curvature	strongly curved
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**Grain**

Colour	red
Colouration with phenol	very dark

**Straw**

Length	short to medium
Wall thickness @20cms below ear	thin

**Glaucosity**

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	strong
Culm - neck	strong
Ear	medium to strong

**Plant growth characters**

Coleoptile - anthocyanin colouration	absent to weak
Plant - growth habit	intermediate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	

## WELCOME

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	short to medium
Density	medium to dense
Shape-side profile	parallel sided
Awns or scurs - presence	awns present
Awns or scurs - distribution	whole length
Awns or scurs - length	very long
Apical rachis segment - convex face hairiness	absent or very weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium (2)
Beak length	very long
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	elev. to elev with 2nd point

#### Lower lemma

Beak curvature	straight
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#### Grain

Colour	red
Colouration with phenol	very dark

#### Straw

Length	medium
Wall thickness @20cms below ear	absent or very thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	medium
Culm - neck	medium
Ear	medium to strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	

## WINTER WHEAT

AFP 1/1449

# WELFORD

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper 1/2
Awns or scurs - length	medium
Apical rachis segment - convex face hairiness	medium to strong
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	slightly rough
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	straight to elevated

#### Lower lemma

Beak curvature	moderately curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	short
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	weak to medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/1281

# XI19

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	medium
Shape-side profile	tapering
Awns or scurs - presence	scurs present
Awns or scurs - length:	short
Awns or scurs - distribution	tip only
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	moderately curved
Shoulder width	narrow
Shoulder shape	straight

#### Lower lemma

Beak curvature	moderately to strongly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	strong
Flag leaf- blade (lower side)	
Culm - neck	strong
Ear	strong to very strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	absent or very weak
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	late
Flag leaf - anthocyanin of auricles	very weak

## WINTER WHEAT

AFP 1/1545

# ZEBEDEE

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium to long
Density	lax to medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{1}{4}$
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	medium - Group 2
Beak length	medium
Beak curvature	slight to moderately curved
Shoulder width	narrow to medium
Shoulder shape	straight

#### Lower lemma

Beak curvature	slightly to moderately curved
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#### Grain

Colour	red
Colouration with phenol	light to medium

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium to strong
Flag leaf- blade (lower side)	
Culm - neck	medium to strong
Ear	strong

#### Plant growth characters

Coleoptile - anthocyanin colouration	medium
Plant - growth habit	intermediate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	absent or very weak

## WINTER WHEAT

AFP 1/2155

# ZULU

### CHARACTERS IN DETAIL

#### Ear

Colour	white
Length	medium
Density	medium
Shape-side profile	parallel sided
Awns or scurs - presence	scurs present
Awns or scurs - distribution	upper $\frac{3}{4}$
Awns or scurs - length:	long
Apical rachis segment - convex face hairiness	medium
Anthers - anthocyanin colouration	absent

#### Lower glume

External surface	smooth
Extent of internal hairs	strong - Group 3
Beak length	medium
Beak curvature	slightly curved
Shoulder width	narrow
Shoulder shape	elevated

#### Lower lemma

Beak curvature	slightly curved
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#### Grain

Colour	red
Colouration with phenol	dark

#### Straw

Length	medium
Wall thickness @20cms below ear	thin

#### Glaucosity

Flag leaf - sheath	medium
Flag leaf- blade (lower side)	weak to medium
Culm - neck	medium
Ear	medium

#### Plant growth characters

Coleoptile - anthocyanin colouration	weak to medium
Plant - growth habit	intermed. to semi-prostrate
Time of ear emergence	medium to late
Flag leaf - anthocyanin of auricles	