

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

Coleoptile-anthocyanin colouration:	Medium to strong
*Plant - growth habit:	Semi prostrate
*Time ear emergence:	Medium to late
Flag leaf - Anthocyanin colouration of auricles:	
Frequency of plants with recurved flag leaves:	Very low to low
*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:	Short to medium
*Straw - wall thickness @ 20cms below ear:	Absent or very thin.
*Ear - Glaucosity:	Strong to very strong
Ear - Supernumerary spikelets - frequency:	
*Ear - Colour:	White
*Ear - Shape (side profile):	Tapering
Ear - Length:	Medium
*Ear - Density:	Lax to medium
*Awns or scurs - presence:	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):	Slightly curved
Lower glume - Beak tip:	
Lower glume - Shoulder width:	Narrow
Lower glume - Shoulder type:	Straight
Lower glume - External surface roughness:	
Lower glume - Extent of internal hairs:	Medium
Lower glume - Internal imprint:	
Lower lemma - Beak shape:	Slightly curved
Lower lemma - Beak length-:	
Lower lemma - Beak swelling:	
Apical rachis segment - convex face hairiness:	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.

31 March 2015

WINTER WHEAT

AFP 1/1928

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

WINTER WHEAT

AFP 1/2016

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	

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	

WINTER WHEAT

AFP 1/1227

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 $\frac{1}{4}$
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 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	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 ¼
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	

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

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

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

WINTER WHEAT

AFP 1/1482

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

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	

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 ¼
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	

WINTER WHEAT

AFP 1/1388

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 $\frac{1}{4}$
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
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	

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 $\frac{1}{4}$
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

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

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 $\frac{1}{4}$
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 - 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 $\frac{1}{4}$
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	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 ¼
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	

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	

WINTER WHEAT

AFP 1/2191

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:

Frequency of plants with recurved flag leaves:

VERY LOW TO LOW

*Flag leaf - Glaucosity of sheath:

VERY STRONG

Flag leaf - Glaucosity of leaf blade:

STRONG TO VERY STRONG

Anthers - anthocyanin colouration:

Glaucosity of neck:

STRONG TO VERY STRONG

Hairiness of uppermost node:

*Plant - height:

SHORT

*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:

MEDIUM TO LONG

*Ear - Density:

DENSE

*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:

Lower glume - Beak shape (curvature):

Lower glume - Beak tip:

MEDIUM TO BROAD

Lower glume - Shoulder width:

STRAIGHT

Lower glume - Shoulder type:

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 TO MEDIUM

*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.

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 $\frac{1}{4}$
Awns or scurs - length:	short to medium
Apical rachis segment - convex face hairiness	weak
Anthers - anthocyanin colouration	absent

Lower glume

External surface	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	

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	

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

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 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	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	