

## SUMMARY OF DETAILS OF VARIETAL IDENTIFICATION FOR HERBAGE SEED CROP INSPECTORS

While positive identification of herbage species is possible (see key), individual varieties cannot usually be identified absolutely. However, TRUENESS TO TYPE can be authenticated according to general conformity in overall habit to known characteristics.

### LEGUMES

These should be inspected when approaching 50% flowering, before there are too many faded flowers or ripening seed heads.

### RED CLOVER

The red clover varieties grown in England and Wales fall into two main groups:

#### EARLY RED CLOVER (traditionally known as Broad Red Clover)

These varieties are earlier in spring growth and earlier to flower than late red clovers. They normally produce two main cuts and a small autumn cut. The seed is taken from the second growth, usually in September and October. The second growth shoots from the crown of the plant and flowering stems have 5-7 internodes. Full flowering on the uncut growth takes place towards the end of June, and on the regrowth about 6-8 weeks after cutting. All varieties shown in the table below are in this group.

| VARIETY         | PLOIDY | AVERAGE FLOWER COLOUR |     | USUAL RANGE OF COLOUR GROUPS | % AVERAGE HAIRINESS |
|-----------------|--------|-----------------------|-----|------------------------------|---------------------|
| Aberchianti     | Dip    | Intermediate          | 7   |                              |                     |
| Aberclaret      | Dip    | Dark                  | 8   |                              |                     |
| Atlantis        | Tet    |                       |     |                              | v.low-low           |
| Deben           | Tet    | Dark                  | 8.4 | 5-9                          | 35                  |
| Essex Broad Red | Dip    | Light                 | 5.5 | 3.5-9                        | 25                  |
| Harmonie        | Dip    | Dark                  | 8   |                              |                     |
| Kuhn            | Dip    | Dark                  | 7.7 | 5-9                          | 20                  |
| Kvarta          | Tet    |                       |     |                              |                     |
| Lemmon          | Dip    |                       |     |                              |                     |
| Marcom          | Dip    | Light                 | 6.3 | 3.5-14                       | 10                  |
| Merviot         | Dip    | Intermediate          | 7   | 3.5-14                       | 25                  |
| Milvus          | Dip    | Dark                  | 8.6 |                              | 11                  |
| Rajah           | Dip    | Intermediate          | 7.2 |                              | 26                  |

#### LATE RED CLOVER (traditionally known as Late Flowering Red Clover)

This group of varieties flowers 14 days later than the early group of varieties and commences growth later in spring. They are more persistent than the early red clovers. The seed is taken from the first growth. If grazed the second growth shoots from the buds at the base of the stems of the first growth. Flowering stems would normally have ten or more internodes.

## WHITE CLOVER

Here leaf size and shape is a useful identification character. Inspectors need to become familiar with comparative leaf sizes of different varieties.

Comparative leaf sizes from NIAB verification plots are shown in the tables. Bear in mind that these are usually considerably larger than in the seed crops, but the RELATIVE SIZES should still apply.

| VARIETY         | PLOIDY | TIME OF FLOWERING | STOLON THICKNESS | LEAF SIZE    |
|-----------------|--------|-------------------|------------------|--------------|
| Aberdai         | Tet    | Intermediate      | Medium           | Medium       |
| Aberguard       | Tet    | Intermediate      | Thin             | Small        |
| Aberjet         | Tet    | Intermediate      | Thick            | Large        |
| Alice           | Tet    | Late              | Medium Thick     | Large        |
| Crusader        | Tet    | Early             | Medium           | Medium Small |
| Kent Wild White | Tet    | Late              | Thin             | Very Small   |
| Kersey          | Tet    | Intermediate      | Fairly Thick     | Medium Large |
| Merwi           | Tet    | Intermediate      | Medium           | Medium       |
| Riesling        | Tet    | Late              | Medium Thick     | Large        |

### Time of inspection

Inspect at end of June or early July when there is vigorous growth and plants are flowering freely. Differences in leaf shape are not so apparent in spring and autumn.

## VETCHES

The two local vetches, English Early and English Late are morphologically similar, but may be distinguished under plot management by their time of flowering. Several continental varieties are now being grown which are recognised as spring types, but many of the crops are still being autumn sown for seed production. Accordingly, inspectors must check sowing time to judge when crops are due for inspection. This should be when the crop is in full flower, usually late June or early July.

Flowers are borne 1-3 in number in leaf axils. The keel petals are a darkish maroon-purple in contrast to the paler standard petal. The latter has a pale silvery-lavender zone near the leaf and on the reverse surface, giving the closed flower a silvery lavender appearance. Off-type flowers may be completely white or cream or a paler form of the true type.

The stems and leaves of Common Vetch are only slightly hairy. Extensive hairiness is a character of Hairy Vetch and if present would be counted as an off - type.

## LUPINS

Agricultural lupins are stout, erect plants, with palmate compound leaves, narrow stipules and large flowers. Lupin species are partially cross-pollinated between plants within each species. In white lupins, the pollen matures after flower opening, allowing a greater possibility of cross-pollination than in blue or yellow lupins where the pollen matures earlier (giving more self-pollination). Lupins, especially white lupins are attractive to bees, this normally results in about 40% cross-pollination in white lupin.

White Lupins (*L. albus*) are usually fairly tall plants with relatively large leaves, consisting of 5-9 broad leaflets. The flowers are larger than in blue and yellow lupins.

Flower colour varies from white to blue or blackish blue, with a range of flowering dates. Anthocyanin stem pigment may be absent to strong. Most varieties are spring-sown.

Blue Lupins (*L. angustifolius*). Plants are generally shorter than normal white lupins, with woody stems, small leaves, narrower leaflets and with blue, purplish, pink or white flowers. Most varieties are spring sown and do not survive normal winters.

Yellow Lupins (*Lupinus luteus*). This species is usually the shortest in height, with medium sized leaves and width of leaflets. Flower colours are a range of yellows. Varieties are spring sown.

### Crop Inspection of Lupins

Previous cropping requirements are: No lupins in the preceding 2 years (good practice),  
1 year ( minimum compatibility)

One field inspection is carried out at Full flowering (usually late June to July for spring sown crops).

Isolation requirements are the same as for other herbage species, minimum distances for certified seed production are 100 metres for crops up to 2 ha, and 50 metres for crops over 2ha.

**Parts of seed crops falling within the isolation distance should be cut out rather than rejection of the whole crop.**

The three species do not cross-pollinate (produce seed) with each other, as each has a different chromosome number.

A narrow physical isolation gap is also required, particularly from adjacent crops of field beans, field peas, soya beans or other lupin species.

Number of quadrats. Varietal off-type counts for certified seed production are made in the usual number of 10m<sup>2</sup> quadrats which are appropriate for the field size.

Examples of off-types are:

Different flower colour  
Indeterminate plants in determinate crop, and vice versa  
Stem anthocyanin colour present or absent  
Plant height differences

Acceptance or Rejection figures for varietal purity are the same as for other herbage species. Maximum average varietal purity standards are 1 off-type plant in 10m<sup>2</sup> for certified seed production (and 1 off-type plant in 30m<sup>2</sup> for Pre-basic or Basic seed production). Other lupin species are not counted as off-types (Seed Standards exist for these).

LUPINS: VARIETY CHARACTERISTICS

|  | Leaf colour at bud stage | Stem anthocyanin at bud stage | Plant height at start of flowering | Plant height at 'green maturity' | Terminal leaflet length | Terminal leaflet width | Flower colour                | Flower colour at end of keel | Flowering time      |
|--|--------------------------|-------------------------------|------------------------------------|----------------------------------|-------------------------|------------------------|------------------------------|------------------------------|---------------------|
| <b>White Lupin</b><br><i>Lupinus albus</i>   |                          |                               |                                    |                                  |                         |                        |                              |                              |                     |
| Amiga  | Medium green             | Medium                        | Medium                             | Medium to tall                   | Medium                  | Medium                 | Blue-green                   | Blue-black                   | Early               |
| Bardo  | Light to medium green    | Medium                        | Short to medium                    | Short to medium                  | Medium                  | Broad                  | Bluish white                 | Bluish black                 | Early               |
| Dieta  | Medium to dark green     | Medium to strong              | Medium                             | Short                            | Medium                  | Medium                 | Bluish white                 | Blue-black                   | Very Early          |
| Volos  | Light to medium green    | Strong                        | Medium to tall                     | Short                            | Long to very long       | Broad                  | Bluish white                 | Bluish black                 | Very early to early |
| <b>Blue Lupin</b><br><i>L. angustifolius</i> |                          |                               |                                    |                                  |                         |                        |                              |                              |                     |
| Arabella                                     | Medium to dark green     | Absent or very weak           | Short-Medium                       | Medium                           | Short                   | Narrow to medium       | White                        | Yellow                       | Early to medium     |
| Baron  | Dark green               | Medium                        | Short-Medium                       | Short-Medium                     | Very short to short     | Narrow to medium       | Blue                         | Blue-black                   | Medium              |
| Bolivio                                      | Medium green             | Absent or very weak<br>Medium | Medium to tall                     | Tall                             | Short                   | Narrow to medium       | Bluish white                 | Yellow                       | Early to medium     |
| Boltensio                                    | Medium to dark green     | Medium to strong              | Medium to tall                     | Tall                             | Medium                  | Narrow to medium       | Bluish white                 | Yellow                       | Early to medium     |
| Bora   | Light to medium green    | Medium                        | Medium-Tall                        | Medium to tall                   | Short                   | Medium to broad        | Bluish white                 | Yellow                       | Early to medium     |
| Bordako                                      | Dark green               | Slight to medium              | Medium                             | Medium                           | Short                   | Very Narrow            | Bluish white                 | Yellow                       | Early-Intermediate  |
| Borlana                                      | Medium to dark green     | Medium to strong              | Medium                             | Short to medium                  | Short                   | Narrow to medium       | Bluish white                 | Yellow                       | Medium              |
| Boruta                                       | Medium green             | Very weak to weak             | Medium                             | Medium                           | Medium                  | Medium to broad        | Base violet shading to white | Yellow                       | Medium to late      |

LUPINS: VARIETY CHARACTERISTICS

|                     | Leaf colour at bud stage | Stem anthocyanin at bud stage | Plant height at start of flowering | Plant height at 'green maturity' | Terminal leaflet length | Terminal leaflet width | Flower colour | Flower colour at end of keel | Flowering time  |
|---------------------|--------------------------|-------------------------------|------------------------------------|----------------------------------|-------------------------|------------------------|---------------|------------------------------|-----------------|
| <b>Blue Lupin</b>   |                          |                               |                                    |                                  |                         |                        |               |                              |                 |
| <b>Cont.</b>        |                          |                               |                                    |                                  |                         |                        |               |                              |                 |
| Borweta             | Dark green               | Slight to medium              | Short-Medium                       | Short-Medium                     | Short                   | V. Narrow-narrow       | Bluish white  | Yellow                       | Early           |
| Haags Blaue         | Dar to very dark         | Medium to strong              | Short-Medium                       | Very short to short              | -                       | -                      | Blue          | Blue black                   | Early           |
| Prima               | Medium green             | Absent or very weak           | Medium                             | Short                            | Long to very long       | Medium to broad        | Bluish white  | Yellow                       | Early to medium |
| Rose                | Medium green             | Weak to very weak             | Medium                             | Medium to tall                   | Short                   | Narrow to medium       | White         | Yellow                       | Early           |
| Sonet               | Dark green               | Strong to very strong         | Medium                             | Very short to short              | Medium                  | Medium                 | Blue          | Blue black                   | Early to medium |
| Viol *              | Dark green               | Medium to strong              | Short-Medium                       | Medium                           | -                       | Medium to broad        | Violet        | Yellow                       | Late            |
| Iris                | Medium                   | Weak                          | Medium                             | Medium                           | Short                   | Medium                 | White         | Yellow                       | Early           |
| <b>Yellow Lupin</b> |                          |                               |                                    |                                  |                         |                        |               |                              |                 |
| <i>L. luteus</i>    |                          |                               |                                    |                                  |                         |                        |               |                              |                 |
| <b>Bornal</b>       | Medium to dark green     | Weak                          | Medium to tall                     | Medium to tall                   | Medium                  | Narrow to medium       | Yellow        | Blue black                   | Medium to early |
| Pootalong           |                          |                               |                                    |                                  |                         |                        | Yellow        |                              |                 |

\* = Determinate growth habit

## CHARACTERS OF COMMON VETCH

| VARIETY       | Type         | Leaf Colour | Shape of Leaflet Tip | Shape of Leaflets | Colour of Standard Petal | Seed Size    | Seed Shape | Seed Coat  |
|---------------|--------------|-------------|----------------------|-------------------|--------------------------|--------------|------------|--|
| AMETHYSTE     | Spring       | Mid green   | Square               | Medium            | Medium Violet            | Large        | Round      | Grey brown, brown and black marbling                                     |
| BERNINOVA     | Spring       | Mid green   | Concaved             | Broad             | Medium Violet            | Small        | Semi round | Grey green with widespread brown blotches and medium blue-black marbling |
| CARMEN        | Dual purpose | Mid green   | Square               | Broad             | Violet                   | Medium       | Oval       | Uniformly dark black, velvet effect                                      |
| CRISTAL       | Winter       | Mid green   | Rounded              | Broad             | Light violet             | Medium       | Round      | Grey brown, extensive black & dark brown blotches and spots              |
| ENGLISH EARLY | Winter       | Dark green  | Concaved             | Broad             | Lilac purple             | Medium large | Semi round | Grey brown, brown and black marbling                                     |
| ENGLISH LATE  | Winter       | Dark green  | Concaved             | Broad             | Lilac purple             | Medium large | Semi round | Grey brown, brown and black marbling                                     |
| LOLITA        | Spring       | Dark green  | Concaved             | Broad             | Deep violet              | Medium       | Oval       | Green to grey base with brown and black blotches                         |
| PRESTA        | Spring       | Mid green   | Square               | Long and Narrow   | Light violet             | Medium       | Semi round | Light brown with darker mottling   |
| SLOVENA       | Spring       | Mid green   | Straight to concaved | Medium            | Bright violet            | Medium       | Round      | Brown with strong blue-black marbling                                    |
| SYLPHIE       | Spring       | Mid green   | Square               | Rounded           | Light violet             | Quite small  | Semi round | -  |
| TOPAZE        | Spring       | Mid green   | Straight             | Medium            | Mid violet               | Medium       | Globose    | Grey brown with brown marbling   |
| TOPLESA*      | Spring       | Dark green  | Concave              | Broad             | Light violet             | Medium       | Angular    |  |

\*Determinate type

**CHARACTERS OF HAIRY VETCH**

| VARIETY                    | Time of flowering | Leaf Colour | Leaflet length | Plant length | Colour of Standard Petal | Seed Size | Seed Shape | Seed Coat |
|----------------------------|-------------------|-------------|----------------|--------------|--------------------------|-----------|------------|-----------|
| <b>OSTSAAT-DR. BAUMANN</b> | Medium            |             | Medium to long | Long         | Violet                   | Medium    |            |           |

**CHARACTERS OF LUCERNE**

| VARIETY        | Time of flowering   | Natural height in spring | Frequency of plants with very dark blue violet flowers | Frequency of plants with variegated flowers | Frequency of plants with cream, white or yellow flowers |
|----------------|---------------------|--------------------------|--|---|---|
| <b>ARTEMIS</b> | Very early to early | Medium to tall           | Absent or very low to low                              | Absent or very low                          | Absent or very low                                      |