Assured Produce

Crop Specific Protocol

BEANS (BROAD, PROCESSED)

(CROP ID: 61)

January 2006
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Preface

This crop specific protocol has been written to complement and avoid duplicating the generic principles of the scheme and appendices.

It is advisable to read the Assured Produce Generic Crop Protocol Standards and the Assured Produce Generic Protocol Guidance Notes (referred to in this document as the Generic Standards and Generic Guidance Notes) first before reading this crop specific protocol.

This protocol is designed to stimulate thought in the mind of the reader.

This crop specific protocol contains crop specific parameters and guidance, where applicable, for the requirements stated in the Generic Standards.

All statements in this protocol containing the words "strongly recommended" (in bold type) will be verified during the Assured Produce assessment and their compliance will form a part of the certification/approval decision. The score required for these "strongly recommended" control points can be found on the final page of this document and in the checklists produced by Assured Produce licensed certification bodies.

Disclaimer and trade mark acknowledgement

Although every effort has been made to ensure accuracy, Assured Produce does not accept any responsibility for errors and omissions.

Trade names are only used in this protocol where use of that specific product is essential. All such products are annotated ® and all trademark rights are hereby acknowledged.

Notes:

EC Review: Major withdrawal of pesticide products

All pesticide information quoted in this Crop Specific protocol was last updated in January 2006. Please also read the accompanying Assured Produce ‘Newsflash’ on the website.

The EC Review of pesticides registered in or before 1993 will not be completed until 2008 at the earliest. There was a major withdrawal of pesticide products in 2003 (as a result of the Review) and several active substances approved for minor uses were not supported by crop protection companies. Certain uses of some of these substances can continue in the UK because they are covered by ‘Essential Use’ derogations. Some active substances have also failed to achieve Annex 1 listing (e.g. simazine) and some additional Essential Uses have been granted until 31 December 2007. There may be other withdrawals or revocations.
Products containing substances which have been revoked are shown on the PSD website (www.pesticides.gov.uk)

**Long Term Arrangements for Extension of Use (LTAEU)**
The PSD have decided it is no longer possible to maintain the Long Term Arrangements for Extension of Use (LTAEU) in their current format and are gradually replacing these Arrangements with Specific Off-Label Approvals (SOLAs). The work will not be completed until early summer 2006. **These replacement SOLAs will be shown on the PSD website when they become available.**

Growers can continue to use approvals under the LTAEU until such time that all relevant SOLAs have been issued by PSD, and until the arrangements are withdrawn by PSD – At that time growers must ensure that they have access to the relevant SOLA notice of approval. In order to comply with current legislation, you should download a SOLA onto your personal computer or retain a paper copy before using any SOLA.

A list indicating the SOLAs which have been requested is available from the PSD website using the following link:

http://www.pesticides.gov.uk/food_safety.asp?id=1576

An announcement detailing the proposed date for revocation of the Long Term Arrangements for Extension of use will be featured on the PSD website, the AP website and in HDC publications and grower press.

Growers should check with their advisers, manufacturers, the Assured Produce website ‘Newsflashes’, the PSD website (www.pesticides.gov.uk)

Any new standards have been prefixed in the text with **(NEW)**
## General introduction

Following a systematic approach will help growers to identify and manage the risks involved in crop production. This protocol is based on a typical crop production process. Using a flowchart approach, food safety, Health & Safety, environmental and quality hazards are identified. Appropriate controls may then be established to minimise risk. Food safety and Health & Safety issues always take precedence over quality and environmental controls.

The flow chart is structured as shown below. Note that the sectional layout of both this protocol and the crop specific protocols follow the same structure.

SITE SELECTION
SITE MANAGEMENT
VARIETY SELECTION
CROP NUTRITION
IRRIGATION
PEST CONTROL
DISEASE CONTROL
WEED CONTROL
HARVEST & STORAGE

The contents of each crop specific protocol are reviewed annually by informed farmers and growers, food technologists, scientists, the relevant fresh produce association, processors and agronomic consultants. Updated editions are issued prior to the cropping season.

The review process considers both new developments and all relevant technology which has emerged throughout the course of the previous year and which have been found to be both workable by the grower and beneficial to the environment. As one aim of the Scheme is to transfer such information and technologies to growers, attention is drawn to those features of specific relevance to ICM by using italic script. In order that growers may be confident that they are working to a current document, each protocol is dated and numbered.
2 Planning and Records

See Generic Standards and/or Generic Guidance Notes.

3 Site selection

3.1 Site history

3.1.1 Climate

Broad Beans can be grown successfully in most parts of the UK but high rainfall leads to excessive vegetative growth and drought stress during flowering and pod fill stages reduces yield.

3.2 Crop rotation

Crop rotation is essential to prevent the build-up of pests and diseases. Several soil-borne fungi can infect Broad Beans and Peas as well as Field Beans and Green Beans. Pea cyst nematode can also be increased if Broad Beans and Peas are grown in the rotation. All beans and Peas should be treated as one and the same crop and not grown more frequently than once in five years.

4 Site management

4.1 Soil mapping

See Generic Standards and/or Generic Guidance Notes.

4.2 Soil type

Broad Beans have a strong taproot, withstanding adverse soil conditions better than Peas and can, therefore, be grown on heavier soil types.

Sowing

Broad Beans have a large flattish seed so only a belt feed and certain vacuum precision drills are suitable and an information leaflet is available from the Processors and Growers Research Organisation. If pre-emergence herbicide simazine is used, sowing depth must be at least 7.5 cm to avoid crop damage from herbicide leaching.
5 Variety selection

Continuity of cropping is achieved with the use of varieties with maturities from early to late, but more often using one variety and sequential sowings based on accumulated heat units, or on observations of seedling development.

6 Nutrition

6.1 Nutrient requirement

Major nutrients

Prior to cropping the field, nutrient status should be determined by soil sampling and analysis. Fertiliser application must be in accordance with crop needs and soil reserves. Particular care should be taken to avoid build up of unnecessarily high levels of phosphorus in the soil as this can cause pollution of surface waters.

Nitrogen-fixing Rhizobia bacteria, which are responsible for root nodulation of Broad Beans, occur naturally in UK soils and supply Broad Beans with their nitrogen requirement. Applications of nitrogen fertiliser, farm manure and sewage sludge are unnecessary and will delay and suppress nodulation. If Broad Beans show symptoms of nitrogen deficiency this may be due to destruction of root nodules, for example in conditions of waterlogging. Applications of nitrogen fertiliser will not be effective because the damaged root system is unable to take up nitrogen.

Phosphate and potash are applied as a base fertiliser before cultivation. Examples of typical fertiliser recommendations are given in Appendix 1.

Lime and pH

Broad Beans require a pH of at least 6.0 to 6.5. If the pH is below 5.5 growth will suffer and an application of lime will be needed. Over-liming should be avoided as it can induce deficiency of trace elements such as manganese.

Trace elements

Treatments should only be applied where a deficiency problem has been identified.

Manganese deficiency is less common in Broad Beans than Peas. Symptoms are chlorosis between veins and round margins of the leaves. Occasionally marsh spot disorder, a necrotic spot that appears on the cotyledons, occurs in Broad Beans. It occurs where the soil is deficient or if manganese is unavailable to the plant and is associated with peaty organic soils and sandy soils with pH over 6.8. Soil analysis for manganese, however, is of little value. It is corrected by foliar sprays of manganese sulphate + wetter.
Magnesium deficiency symptoms are interveinal chlorosis or necrosis of older leaves with leaf margins remaining green. The older leaves are affected first. It is uncommon but may occur on sandy acid soils or where there is excess potash. Soil analysis will identify where there is a problem. At index 0 and if liming is also necessary, it can be corrected with magnesian limestone (see Appendix 1), either before Broad Beans or elsewhere in the rotation. If crop treatment becomes necessary, corrective foliar sprays with magnesium sulphate should be applied.

7 Irrigation

Broad Beans are very sensitive to drought stress and are responsive to irrigation. Scheduling systems help to forecast the timing and priority order. Broad Beans are most sensitive to soil moisture deficits from the beginning of flowering onwards and irrigation can achieve large yield increases. There is no information available regarding possible increases in diseases such as chocolate spot (*Botrytis fabae*).

8 Crop protection

8.1 The basic approach to crop protection

*The guiding principle is that pesticide use should be minimised. An integrated approach should be adopted to achieve this involving the following management steps.*

**Planning**

- *a*) sensible crop rotations to avoid build-up of problems.
- *b*) careful site selection to avoid potential or previous problems thereby enhancing crop health and cleanliness.
- *c*) inclusion of resistant varieties in cropping programmes whilst retaining the required quality parameters and eating characteristics.

**Cultural preventative techniques**

- *a*) good crop and field hygiene.
- *b*) promoting crop health by ensuring effective nutrient availability through soil analysis and accurate application of fertilisers and trace elements.
- *c*) utilising available irrigation to promote healthy growth and as a control measure wherever appropriate and feasible.

**Corrective action**
Where corrective or protective action is necessary the following approach should be adopted.

a) The need to take corrective or protective action must be established by regular monitoring and reference to established thresholds. The effect of prevailing and predicted weather conditions on the need for treatments must be considered.

b) The availability and use of biological and natural methods of pest and disease control must be reviewed and applied if appropriate.

c) Where chemical control is essential:

- **Broad Beans are dependent on insects, for example bees, for pollination. Pesticides classed as harmful, dangerous or extremely dangerous to bees must not be used when Broad Beans are in flower.**

- **The least toxic and persistent product should be selected with due regard to its efficiency and ecotoxicity.**

- **The minimum effective dose should be used.**

- **An appropriate application method with effectively maintained equipment should be chosen.**

- **Selective and spot treatments should be used whenever appropriate.**

### 8.2 Plant protection product choice

See Generic Standards and/or Generic Guidance Notes.

NEW

**Approved uses not included on the product label**

In some circumstances product labels do not include all of the approved uses and growers and advisers wishing to check the approval notice of a particular product should note that this information is available from [www.pesticides.gov.uk/psd_databases.asp](http://www.pesticides.gov.uk/psd_databases.asp)

A search on the database for a product name should yield a results page. A click on the product name should link to a summary of the approval information. At the bottom of the summary are links to available notices which will give the statutory conditions of use.

In the case of products with older approval an electronic approval may not be available. In these cases growers should contact the PSD Information Services Branch for details of the approved conditions of use. Contact details are: p.s.d.information@psd.defra.gsi.gov.uk tel. 01904 455775.
8.3 **Advice on the use of pesticides**

See Generic Standards and/or Generic Guidance Notes.

8.4 **Application of pesticides**

See Generic Standards and/or Generic Guidance Notes.

8.5 **Records of application**

See Generic Standards and/or Generic Guidance Notes.

8.6 **Protective clothing/equipment**

See Generic Standards and/or Generic Guidance Notes.

8.7 **Pesticide storage**

See Generic Standards and/or Generic Guidance Notes.

8.8 **Empty pesticide containers**

See Generic Standards and/or Generic Guidance Notes.

8.9 **Pesticide residues in fresh produce**

See Generic Standards and/or Generic Guidance Notes.

**NEW**

See Generic Protocol Guidance Notes 8.9 for further background and generic advice.

*Assured Produce is aware that a key area in the production of fresh produce which requires continued attention by growers and their advisers is that of keeping pesticide residues to a minimum. This issue is not just one of meeting the MRL trading standard but ensuring that any individual or multi residues are kept as low as possible below this level.*

The key targets are –

- Optimising late applications of fungicides and insecticides to the edible part of the crop
- Optimising the use of post harvest treatments
- Ensuring minimum harvests intervals are followed
- Ensuring that application equipment is applying products correctly

Although every effort has been made to ensure accuracy, Assured Produce does not accept any responsibility for errors and omissions.
Currently there are no residue issues associated with this crop but awareness needs to be maintained for any future issues.

## 8.10 Pest, disease and weed control

### 8.10.1 Pest control

#### 8.10.1.1 Pea and bean weevil (*Sitona lineatus*)

Weevils feed on the leaves and cause semi-circular notches around the leaf margins. Adults migrate to beans from their overwintering sites mainly in early spring when the maximum air temperature exceeds 12°C. Larvae, from eggs laid by the adults, feed below ground on the nitrogen-fixing root nodules. Newly emerged seedlings are more prone to weevil injury.

**Chemical control:** Where weevil are known to be an annual problem, an insecticide spray applied to newly emerged seedlings at the first sign of leaf notching, particularly after a few warm days, will reduce further leaf injury and interrupt egg laying.

**Cultural control:** Avoid producing cloddy seedbeds that are preferred by the weevils. Good soil conditions will allow rapid germination and emergence of the crop increasing the chances of growing away quickly from attack. Later sown crops are less likely to be severely attacked. A monitoring system is available from Agralan Ltd, Ashton Keynes, Swindon.

#### 8.10.1.2 Stem and bulb nematode (*Ditylenchus dipsaci*)

Damage is often first seen as the plants reach the flowering stage. Plants are stunted with thickened, twisted stems. Leaves may be thickened and brittle with discoloration occurring in the leaf petioles. Stems may discolor and break and pods fail to fill evenly and seeds are poorly developed or discoloured.

**Chemical control:** The nematodes can survive in the soil for several years, but no chemicals are approved for control in the soil.

**Cultural control:** Nematodes can be seed-borne and it is **strongly recommended** that all seed is be tested for the presence of the pest and discarded if found. The pest can infest new land and so an adequate rotation will help to prevent build-up in the soil.

*There are two races, the 'oat onion' race has a very wide host range but the 'giant' race is the one most usually found infesting beans. When established in a crop, the produce should not be used for seed and a break of at least ten years should be left before Beans (Field and Broad) flower bulbs, Onions, susceptible varieties of Oats, Lucerne or Peas are grown. A seed test is available from Processors and Growers Research Organisation or NIAB.*
8.10.1.3 Black bean aphid (*Aphis fabae*)

Dense colonies of black aphid can develop at any time on the upper part of the stem from the onset of flowering onwards. Damage occurs mainly as a direct effect of feeding and pods can be blemished. In addition both black bean aphid and pea aphids can transmit viruses such as bean leaf-roll virus (see Section 8.10.2.6).

**Chemical control:** Black bean aphids are relatively easy to control, but the choice of insecticides should be limited to those that will not harm pollinating insects. When 10% of the plants are colonised, spraying should be carried out as soon as possible. The most effective timing of sprays is at early flower but insecticides that are harmful to bees should not be used on flowering beans.

**Cultural control:** *The presence of thistles or fat hen in the crop can encourage aphid infestation.*

8.10.1.4 Bean seed beetle (*Bruchus rufimanus*)

The damage is caused by the larvae of the beetle, which feed inside the developing beans within the pod. Adult beetles are black, oval in shape, 3.5-4.5 mm long with ridged wing cases that do not cover the abdomen. Eggs are laid on young pods and the larvae burrow down through the pod and into the seed. They are creamy white, with a dark head, and the legs are not obvious to the naked eye. The presence of the pest is not detected until after the beans have been shelled. If allowed to mature to seed in the field, the larvae pupate within the seed and bite their way out leaving a circular hole.

**Chemical control:** Flowering crops should be examined for the presence of adults by tapping the flowering stems into the hand or a small flat box. A spray of deltamethrin should be applied if adults are found when the first pods have begun to set on the lowest truss. A second spray should be applied 7 days later. Beekeepers should be warned before applications are made.

**Cultural control:** *The beetles fly to beans during flowering from overwintering sites adjacent to the previous years field bean crops. Avoid planting beans near to such areas.*

8.10.1.5 Capsids (*Lygus spp.*)

Capsids (plant bugs) can be a problem in some areas. They overwinter as adults on evergreen foliage and in all types of leaf litter. They emerge from their overwintering sites in late spring and can feed on a wide range of plants. The main damage to Broad Beans occurs just after pod formation, when the adults puncture the pod wall with their hollow piercing-sucking mouthparts. Young Broad Beans within the pods can also be pierced and as the seeds develop, the damage begins as a small split, which discolours after vining. Such blemished seeds are unacceptable by the processors. Damage is more likely in hot dry weather and is highest in beans growing close to areas of perennial vegetation.
**Chemical control:** Sprays applied for bruchid beetle control will control capsids. However, as the damage is likely to be more severe around the edges of the crop, selective treatment of those areas may be more desirable.

**Cultural control:** Avoid planting Broad Beans in close proximity to large hedges or areas of perennial vegetation.

### 8.10.2 Disease control

#### 8.10.2.1 Foot rot (*Fusarium solani f. sp. viciae / Fusarium culmorum*)

Individuals or groups of plants are stunted, the foliage becomes progressively chlorotic and wilting is followed by premature leaf fall and death. The stem base is blackened and decayed and the root system is severely restricted and discoloured.

**Chemical control:** There are no chemicals available to control foot rot in beans. Approved seed treatments are inadequate to reduce infection.

**Cultural control:** Broad Beans are particularly susceptible especially in consolidated soil which can cause a moisture stress in dry summers. An adequate rotation is necessary to avoid the build up of fungi in the soil. Avoid adverse soil conditions and grow beans only on well-drained soils.

#### 8.10.2.2 Downy mildew (*Peronospora viciae*)

Severe infection can reduce flower numbers, cause defoliation and death of the growing point. Early symptoms appear as pale areas on the upper surface of the leaves. The lesions become grey and necrotic at the centre with paler green zones at their margins. The undersides of the lesions are grey-brown becoming a greyish-mauve with a velvety fungal growth. If the growing points become infected, the whole leaves appear pale and are covered with the light grey downy growth of the fungus.

**Chemical control:** It is strongly recommended that the development of downy mildew is monitored and fungicide applications are only made where they can be justified. A fungicide should be applied at early flowering when symptoms are first seen on about 25% of the plants. A repeat spray may be necessary 10-14 days if the disease develops later on, particularly during humid weather conditions. If mildew infects the upper leaves after all the pods have set, treatment is not worthwhile.

**Cultural control:** The disease is soil-borne and spreads within the crop by means of airborne spores. Avoid planting beans on fields where there is a known history of downy mildew. Later sown crops tend to be more susceptible to mildew as they are less well developed at the time that air-borne spores enter the crop.

#### 8.10.2.3 Chocolate spot (*Botrytis fabae / Botrytis cinerea*)

Symptoms may show from early flowering onwards when the first 'non-aggressive' lesions develop on the lower leaves. They are reddish brown and vary in size from small dots to
rounded sunken spots 1-2 mm in diameter. During May and June, if weather conditions are wet, the disease develops on all of the leaves and the disease becomes 'aggressive' to form larger grey-brown blotches. On the stem, reddish brown streaks occur and the pod surfaces may be discoloured and pitted. Spring sown crops may develop the disease from mid-flowering onwards.

**Chemical control:** It is strongly recommended that the development of chocolate spot is monitored and fungicide applications are only made where they can be justified. A spray at early to mid-flower may be necessary if spotting is present on the bottom half of the plants. A second spray may be applied 2-3 weeks later if necessary.

**Cultural control:** Chocolate spot is favoured by wet conditions or high humidity together with low light intensity. High plant population should be avoided. Beans that are under stress are also susceptible and there is evidence that where beans have been drilled shallowly and treated with simazine herbicide are also more prone to chocolate spot.

### 8.10.2.4 *Ascochyta* leaf and pod spot (*Ascochyta fabae = Didymella fabae*)

The disease is primarily seed-borne and beans develop symptoms shortly after the first leaves have expanded. Brownish grey circular lesions 3-5 mm in diameter appear in the leaves and stems. These can then enlarge and spores are splashed by rain onto surrounding plants. Deep brown lesions develop on the pod making them unmarketable.

**Chemical control:** Seed treatments containing thiabendazole are only partially successful in controlling *Ascochyta* in the seed. Some fungicides applied for chocolate spot or downy mildew control have little effect on *Ascochyta*, although azoxystrobin has been shown to reduce foliar infection (Appendix 9)

**Cultural control:** Use only healthy seed. It is strongly recommended that seed is tested for the presence of *Ascochyta fabae*. Site Broad Beans away from winter field bean crops that may be infected.

### 8.10.2.5 Rust (*Uromyces fabae*)

Late sown beans are more likely to suffer infection of rust in dry seasons. Small white to orange dots surrounded by a thin pale yellow halo appear on the leaves. Later the dots develop as orange brown pustules, sometimes occurring in rings and release brown spores as a dust. The pustules can develop on the stems. Yield can be severely affected as the plant can defoliate before pods are completely filled.

**Chemical control:** Mixtures containing chlorothalonil applied for downy mildew control, suppress rust infection.

For control, apply tebuconazole as soon as rust pustules are seen (see Appendix 8). If rust appears after pod fill, the yield is not significantly affected.

**Cultural control:** Rust is favoured by hot dry conditions with humid nights. Late sown crops are more susceptible to infection.
8.10.2.6 Bean leaf roll virus (BLRV) / Pea enation mosaic virus (PEMV)

Black bean aphid and pea aphid transmit both viruses. The leaves display interveinal yellowing and BLRV predisposes the plant to chocolate spot. PEMV produces a mosaic pattern on the leaves. Individual or small groups of plants are infected coinciding with earlier aphid infestation.

Control: As for aphids.

8.10.2.7 Broad bean stain virus (BBSV)

Leaf symptoms include a mottling with light and dark green areas visible on the surface. Some leaf distortion may occur. The main effect of the virus is on the produce, which displays a dark brown coloured area around the periphery of the seed.

Chemical control: The virus is seed-borne, but can be transmitted to neighbouring plants by the pea and bean weevil and clover seed weevil. Such transmission however, may be low and specific control measures are unnecessary.

Cultural control: *The health of new seed has been generally good, but care should be taken with home-saved seed particularly if used repeatedly over several years. The use of new seed at regular intervals is likely to prevent infections from virus-infected seed.*

8.10.3 Weed control

Weeds must be controlled to prevent yield loss and ensure ease of harvesting. Some species can contaminate produce; for example, pieces of volunteer oilseed rape stem and leaf and every effort should be made to eliminate them.

The most effective means of eradicating perennial grasses is with an application of glyphosate in autumn before sowing Broad Beans. Weeds that have not been eliminated by cultivations can be killed, prior to sowing, with non-selective herbicides (carfentrazone-ethyl, paraquat, paraquat/diquat, glufosinate-ammonium and glyphosate).

*Inter-row cultivations can be used, since the crop is normally grown in wide rows. However cultivations will usually stimulate another flush of weeds.*

8.10.3.1 Herbicides

A wide range of residual pre-emergence herbicides for broad-leaved weeds is available for the Broad Bean crop, but only one, bentazon, is approved for post-emergence use and the weed spectrum it controls is limited.

Most Broad Beans are treated with a residual herbicide provided the soil type is suitable. It is strongly recommended that growers are aware of the soil type (ADAS classification) when deciding the dose rates of residual pre-emergence herbicides. Where simazine, the cheapest treatment, is used pre-emergence care must be taken to sow Broad
Beans at a depth of at least 7.5 cm to minimise the risk of crop damage. The recommendations for avoiding pesticide contamination of water must be observed.

Some varieties of Broad Beans are sensitive to herbicides and information is available from the Processors and Growers Research Organisation (see Appendix 10).

Currently approved herbicides are listed in Appendix 6.

8.10.3.2 Problem weeds

It is strongly recommended that growers adopt a policy for reducing volunteer problems for oilseed rape and potatoes by using appropriate husbandry practices after harvest of these crops. Volunteer potatoes can be a problem and they cannot be killed in Broad Beans. After the potato harvest, do not plough down remaining tubers as this aids their survival. Potato tubers left on or near the soil surface are likely to be affected by frosts or eaten by animals. Every attempt should be made to control them in other crops in the rotation.

Allowing shed seed to germinate after harvest can reduce volunteer oilseed rape numbers. Fomesafen/terbutryn pre-emergence of Broad Beans, and bentazone post-emergence will give good control of volunteer rape.

Thistles cannot be controlled in Broad Beans.

9 Harvesting and storage

Crop hygiene

Although this is difficult in a tall crop, it is recommended that areas adjacent to lay-bys, public highways and footpaths, and housing etc. are inspected just before machine harvesting. Any glass, metal, plastic, wood or other foreign bodies should be removed to avoid product contamination and the resulting problem in the factory.

10 Pollution control and waste management

See Generic Standards and/or Generic Guidance Notes.

11 Energy efficiency

See Generic Standards and/or Generic Guidance Notes.

12 Health & Safety

See Generic Standards and/or Generic Guidance Notes.
13 Conservation issues

See Generic Standards and/or Generic Guidance Notes.
## Appendix 1 Typical application rates for nutrients

### Major nutrient requirements (kg/ha) (Source: DEFRA booklet RB209)

<table>
<thead>
<tr>
<th>Nutrient (kg/ha)</th>
<th>Soil Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Phosphate (P$_2$O$_5$)</td>
<td>200</td>
</tr>
<tr>
<td>Potash (K$_2$O)</td>
<td>200</td>
</tr>
<tr>
<td>Magnesium (MgO)</td>
<td>100</td>
</tr>
</tbody>
</table>

**Notes:**

1. Magnesium is not necessary for every crop and can be applied elsewhere in the rotation as magnesian limestone on acid soils.

These recommendations for P and K are very high and are to build up soil nutrients in a vegetable rotation. Where there is no plan to raise the soil index level, or in an arable rotation, the recommendations may be reduced by 150 kg/ha at index 0, 100 kg/ha at index 1 and 50 kg/ha at index 2-. The amounts shown as M replace nutrients removed by typical crop yields and are maintenance dressings.

At indices of 2 or above in an arable rotation, P and K are seldom applied to Broad Beans in practice.

The total quantity of fertiliser required should be applied to the seedbed.

**Untreated or digested sewage sludge must not be applied within the crop rotation**

Only advanced treated sewage sludge may be used within the crop rotation and it must not be applied within 10 months of harvest. Applications shall be carried out in accordance with the Regulations and the current DEFRA Code of Practice for the Agricultural Use of Sewage Sludge.

“**Exempted wastes**” for example septic tank sludge and blood & guts from abattoirs should not be used within the rotation.

Consult your processor if vegetable waste is to be applied to the field.
## Appendix 2  Insecticides currently approved for control of pea and bean weevil in Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha-cypermethrin</td>
<td>contact and ingested pyrethroid: emulsifiable concentrate. Dangerous to bees. Extremely dangerous to fish and aquatic life.</td>
<td>11 days</td>
<td>Harmful Irritant</td>
<td>A</td>
<td>0.05*</td>
</tr>
<tr>
<td>deltamethrin</td>
<td>contact pyrethroid: emulsifiable concentrate or granule. Dangerous to bees. Extremely dangerous to fish and aquatic life.</td>
<td>none stated</td>
<td>Harmful Irritant</td>
<td>A</td>
<td>0.05*</td>
</tr>
</tbody>
</table>

**Notes:**

* set at or about the limit of determination

(1) or latest time of application

**Category A** - This product is not eligible for buffer zone reduction under the Local Environmental Risk Assessment for Pesticides (LERAP) scheme.

Consult processors before using any of these agrochemicals.

Not all products containing these active ingredients may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.
Appendix 3  Insecticides currently approved for control of aphid in Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>nicotine</td>
<td>alkaloid: liquid non-persistent contact. Harmful to bees. Dangerous to fish and aquatic life.</td>
<td>2 days</td>
<td>Harmful</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>pirimicarb</td>
<td>carbamate with contact fumigant and translaminar activity: water dispersible granule. Has little effect on bees, ladybirds or other insects.</td>
<td>3 days</td>
<td>Harmful</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>rotenone</td>
<td>natural contact insecticide of low persistence. Emulsifiable concentrate. Dangerous to fish or other aquatic life.</td>
<td>1 day</td>
<td>Irritant</td>
<td>none stated</td>
<td>none set</td>
</tr>
</tbody>
</table>

**Notes:**

(1) or latest time of application

Consult processors before using any of these agrochemicals.

Not all products containing these active ingredients may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.
### Appendix 4  Fungicides currently approved for control of chocolate spot in Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorothalonil + metalaxyl</td>
<td>mixture of chlorophenyl and acylaniline fungicides: suspension concentrate</td>
<td>14 days</td>
<td>Irritant</td>
<td>B</td>
<td>0.05/0.0 2</td>
</tr>
<tr>
<td>chlorothalonil + metalaxyl M</td>
<td>mixture of chlorophenyl and acylaniline fungicides: suspension concentrate</td>
<td>14 days</td>
<td>Irritant</td>
<td>B</td>
<td>0.05/0.0 2</td>
</tr>
<tr>
<td>vinclozolin</td>
<td>a protectant dicarboximide: suspension concentrate with minimal hazard to bees if used during flowering. Harmful to fish and aquatic life.</td>
<td>14 days</td>
<td>Irritant</td>
<td>none stated</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Appendix 5  Fungicides currently approval for control of downy mildew in Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cymoxanil + metalaxyl M + fludioxinil</td>
<td>off-label approval for downy mildew control (seed treatment)</td>
<td>none stated</td>
<td>none stated</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>fosetyl aluminium</td>
<td>systemic phosphonic acid: wettable powder</td>
<td>17 days</td>
<td>none stated</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>metalaxyl + chlorothalonil</td>
<td>mixture of acylaniline and chlorophenyl fungicides: suspension concentrate</td>
<td>14 days</td>
<td>Irritant</td>
<td>none stated</td>
<td>0.05/0.0 2</td>
</tr>
<tr>
<td>chlorothalonil + metalaxyl M</td>
<td>mixture of chlorophenyl and acylaniline fungicides: suspension concentrate</td>
<td>14 days</td>
<td>Irritant</td>
<td>B</td>
<td>0.05/0.0 2</td>
</tr>
</tbody>
</table>

**Notes:**

**Category B** - This product qualifies for inclusion within the LERAP scheme for ground crop sprayers if there are measures applicable (eg. nozzles).

Consult processors before using any of these agrochemicals.

Not all products containing these active ingredients may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.
Appendix 6  Herbicides currently approved for use in Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bentazone</td>
<td>contact diazinone: soluble concentrate or water soluble granule. Apply post-emergence for annual broad-leaved weeds. One application or two as a split dose. Minimum 6 hr free from rain required after application. Harmful to aquatic organisms</td>
<td>Single dose: 4 leaf pair stage. Split dose: 6 leaf pairs and before crop exceeds 15cm in height</td>
<td>Harmful</td>
<td>Irritant</td>
<td>Risk of serious damage to eyes</td>
</tr>
<tr>
<td>cyanazine</td>
<td>Contact and residual triazine: suspension concentrate. Apply pre-emergence of crop (spring-sown) and weeds for annual grasses and broad-leaved weeds. Very toxic to aquatic organisms.</td>
<td>pre-emergence</td>
<td>Harmful</td>
<td>none stated</td>
<td>LGERP set</td>
</tr>
</tbody>
</table>

Notes:

* level at or about the limit of determination
(1) or latest time if application

Consult processors before using any of these agrochemicals.

Not all formulations of each active ingredient may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.
### Appendix 6  Herbicides currently approved for use in Broad Beans (Cont'd)

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>fluazifop-p-butyl (2)</td>
<td>SOLA (Very toxic to aquatic organisms EC formulation). <strong>Do not apply by hand-held equipment including knapsack sprayers</strong></td>
<td>before flower buds visible</td>
<td>Irritant (Harmful EC formulation)</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>fomesafen / terbutryn Essential Use until 31 Dec 2007</td>
<td>residual and contact diphenyl ether/triazine: suspension concentrate. Apply pre-emergence of the crop (spring-sown) for broad-leaved weeds. Only cereals to follow in the same year of use. Use only once in five years. Toxic to aquatic organisms.</td>
<td>pre-emergence</td>
<td>Harmful Irritant</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>glufosinate – ammonium</td>
<td>contact phosphinic acid: soluble concentrate. Non-selective. Apply only between 1 March - 30 Sept. Apply pre-drilling or pre-emergence of the crop, alone or in tank-mix with some residual herbicides. Rain free period of 4 hr should follow spraying. Harmful to fish and other aquatic life.</td>
<td>pre-drilling or pre-emergence</td>
<td>Harmful Irritant</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>glyphosate</td>
<td>translocated phosphonic acid: soluble concentrate or water-soluble granule. Non-selective. Apply pre-drilling and (some formulations) pre-emergence of the crop alone or in tank-mix with some residual herbicides. Rain free period of 6 hr should follow spraying. Toxic to aquatic organisms</td>
<td>pre-drilling or pre-emergence</td>
<td>Irritant</td>
<td>none stated</td>
<td>0.1*</td>
</tr>
<tr>
<td>linuron/ trifluralin</td>
<td>Residual and contact urea / dinitroaniline:emulsifiable concentrate. Apply pre-emergence for control of annual meadow-grass and annual broad-leaved weeds. Very toxic to aquatic organisms.</td>
<td>pre-emergence</td>
<td>Harmful Irritant</td>
<td>B</td>
<td>0.1 linuron (Beans without pods)</td>
</tr>
<tr>
<td>paraquat</td>
<td>contact bipyridyl: soluble concentrate. Non-selective. Apply to stubble, pre-sowing or pre-emergence of the crop or as a tank-mix with some residual herbicides. Spray is rainfast after 10 minutes. Very toxic to aquatic organisms.</td>
<td>pre-drilling or pre-emergence</td>
<td>Harmful Irritant</td>
<td>Poison: Paraquat can kill if swallowed</td>
<td>none stated</td>
</tr>
</tbody>
</table>

**Notes:**

Although every effort has been made to ensure accuracy, Assured Produce does not accept any responsibility for errors and omissions.
(1) or latest time if application
(2) SOLA see Appendix 8 for the specific product and expiry date
* level at or about the limit of determination

Consult processors before using any of these agrochemicals. Not all formulations of each active ingredient may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.
### Appendix 6  Herbicides currently approved for use in Broad Beans (Cont'd)

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>paraquat / diquat</td>
<td>contact bipyridyls: soluble concentrate. Non-selective. Apply to stubble, pre-</td>
<td>pre-drilling or pre-</td>
<td>Harmful</td>
<td>none stated</td>
<td>0.05*/0.05*</td>
</tr>
<tr>
<td></td>
<td>sowing or pre-emergence of the crop, alone or in a tank-mix with some herbicides.</td>
<td>emergence</td>
<td>Irritant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spray is rainfast after minutes. Very toxic to aquatic organisms.</td>
<td></td>
<td>Poison:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Paraquat can kill if swallowed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>simazine#</td>
<td>residual triazine: soluble concentrate or wettable powder. Apply pre-emergence</td>
<td>Autumn sown: Before</td>
<td>Some products</td>
<td>B</td>
<td>none set</td>
</tr>
<tr>
<td>Essential Use</td>
<td>of weeds for annual broad-leaved weeds and some annual grasses. Maximum number</td>
<td>the end of February.</td>
<td>Irritant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>until 31 Dec 2007</td>
<td>of treatments, one per year. Use is restricted to one product containing simazine (or atrazine) up to a maximum approved rate. Allow at least 7 months before drilling or planting other crops. Dangerous to fish or other aquatic life.</td>
<td>Spring sown: 7 days after drilling.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>terbutryn /</td>
<td>residual and contact triazines: concentrate. Apply pre-emergence of crop (spring-sown) for annual broad-leaved weeds and annual meadow-grass. Harmful to fish and other aquatic life.</td>
<td>pre-emergence</td>
<td>Harmful</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>terbuthylazine</td>
<td></td>
<td></td>
<td>Irritant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essential Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>until 31 Dec 2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trifluralin#</td>
<td>Soil-incorporated dinitroaniline: emulsifiable concentrate. Apply pre-sowing and</td>
<td>pre-sowing or pre-</td>
<td>Harmful</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td></td>
<td>incorporate or apply pre-emergence. For annual meadow-grass and some broad-leaved weeds. Mayweeds, volunteer oilseed rape and other cruciferous weeds resistant. Very toxic to aquatic organisms.</td>
<td>emergence</td>
<td>Irritant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

(1) or latest time if application

* level at or about the limit of determination

# Take care with waste disposal. Substance prescribed under the Water Resources Act.

**Buffer Zone: Category B** - This product qualifies for inclusion within the LERAP scheme for ground crop sprayers if there are measures applicable (eg. nozzles).

Consult processors before using any of these agrochemicals.

Not all formulations of each active ingredient may be currently approved for use on Broad Beans.

Although every effort has been made to ensure accuracy, Assured Produce does not accept any responsibility for errors and omissions.
Check before use. Label recommendations are revised regularly, read a current label before use.

### Appendix 7  Seed treatments currently approved for Broad Beans

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Harvest Interval (1)</th>
<th>Hazard Rating</th>
<th>LERAP Category</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>thiram</td>
<td>a protectant dithiocarbamate fungicide: flowable concentrate for control of damping-off.</td>
<td>none stated</td>
<td>Irritant</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>thiram + thiabendazole</td>
<td>mixture of dithiocarbamate and benzimidazole: flowable concentrate for control of <em>Ascochyta</em> and damping-off.</td>
<td>none stated</td>
<td>Harmful</td>
<td>none stated</td>
<td>none set</td>
</tr>
<tr>
<td>cymoxanil + metalaxyl M + fludioxonil(2)</td>
<td>Mixture of acylanilines and cyanopyrole fungicides for control of downy mildew</td>
<td>none stated</td>
<td>Irritant</td>
<td>none stated</td>
<td>none set</td>
</tr>
</tbody>
</table>

**Notes:**

(1) or latest time of application

(2) SOLA Consult processors before using any of these agrochemicals. Not all products containing these active ingredients may be currently approved for use on Broad Beans. Check before use. Label recommendations are revised regularly, read a current label before use.

### Appendix 8  Specific off-label approvals for Broad Beans

<table>
<thead>
<tr>
<th>Number</th>
<th>Product Name</th>
<th>Ingredients</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2231/04</td>
<td>Fusilade 250 EW ®</td>
<td>fluazifop-p-butyl</td>
<td>31/12/08</td>
</tr>
<tr>
<td>2138/03</td>
<td>Fusilade Max ®</td>
<td>fluazifop-p-butyl</td>
<td>31/12/2008</td>
</tr>
<tr>
<td>2230/04</td>
<td>Fusilade 250 EW ® (06531)</td>
<td>fluazifop-p-butyl</td>
<td>28/2/06</td>
</tr>
<tr>
<td>1203/01</td>
<td>Folicur(®) for rust control</td>
<td>tebuconazole</td>
<td>unlimited</td>
</tr>
<tr>
<td>2311/03</td>
<td>Amistar®</td>
<td>azoxystrobin</td>
<td>1/07/2008</td>
</tr>
<tr>
<td>3932/02</td>
<td>Wakil XL®</td>
<td>cymoxanil + metalaxyl M + fludioxonil</td>
<td>31/12/2008</td>
</tr>
</tbody>
</table>

**Notes:** Specific off-label approvals (SOLAs) provide for the use of the product named in respect of crops, situations or pests other than those included on the product label. Such use is undertaken at the user's choosing and the risk is entirely theirs and/or their advisers.

Specific off-label use may only take place if all the conditions given in the "Notice of Approval" document, the product label and/or leaflet and any additional guidance on off-label approvals have first been read and understood. The conditions of approval given in the "Notice of Approval" are statutory and supersede any on the label which would otherwise apply.

All SOLAs are conditional on the extant approval of the specific product. Consult processors before using any of these agrochemicals.
## Appendix 9  Products approved for use on Broad Beans by extrapolation*

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Features</th>
<th>Crop from which extrapolation is made</th>
<th>MRL (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insecticides</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>alpha-cypermethrin</td>
<td>insecticide for the control of aphid and bean weevil.</td>
<td>vining peas</td>
<td>0.05*</td>
</tr>
<tr>
<td>cypermethrin</td>
<td>insecticide for the control of aphid and bean weevil.</td>
<td>vining peas</td>
<td>0.05*</td>
</tr>
<tr>
<td>zeta cypermethrin</td>
<td>insecticide for bean weevil and aphid control.</td>
<td>vining peas</td>
<td>0.05*</td>
</tr>
<tr>
<td><strong>Fungicides</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>azoxystrobin</td>
<td>protectant fungicide for chocolate spot and rust control.</td>
<td>vining peas</td>
<td>0.02</td>
</tr>
<tr>
<td>metconazole</td>
<td>A conazole fungicide for rust control</td>
<td>vining peas</td>
<td>None set</td>
</tr>
<tr>
<td><strong>Herbicides</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clomazone</td>
<td>pre-emergence herbicide for control of cleavers and some other broad-leaved weeds.</td>
<td>vining peas</td>
<td>none set</td>
</tr>
<tr>
<td>cycloxydim</td>
<td>post-emergence herbicide for annual and perennial grass weeds (not annual meadow-grass) and volunteer cereals. HI 5 weeks.</td>
<td>vining peas</td>
<td>none set</td>
</tr>
<tr>
<td>isoxaben/terbuthylazine</td>
<td>pre-emergence herbicide for control of annual meadow-grass and broad-leaved weeds <strong>Apply pre-emergence only. Not safe post-emergence</strong></td>
<td>vining peas</td>
<td>none set</td>
</tr>
<tr>
<td>linuron/trifluralin</td>
<td>pre-emergence herbicide for control of annual meadow-grass and annual broad-leaved weeds.</td>
<td>vining peas</td>
<td>0.1 linuron</td>
</tr>
<tr>
<td>Pendimethalin #</td>
<td>pre-emergence herbicide for control of broad-leaved weeds including polygonums.</td>
<td>vining peas SOLA</td>
<td>0.2</td>
</tr>
<tr>
<td>quizalofop-p-ethyl</td>
<td>post-emergence herbicide for annual and perennial grass weeds (not annual meadow-grass) and volunteer cereals. HI 5 weeks.</td>
<td>vining peas</td>
<td>none set</td>
</tr>
<tr>
<td>tepraloxydim</td>
<td>post-emergence herbicide for black grass, volunteer cereals and annual meadow-grass. HI 5 weeks. Application prohibited between 1 Nov and 1 Mar.</td>
<td>vining peas</td>
<td>none set</td>
</tr>
<tr>
<td>tri-allate</td>
<td>granules: apply pre- or post-drilling and incorporate but pre-emergence of the crop for wild oats, blackgrass and annual meadow-grass. Not volunteer cereals.</td>
<td>vining peas</td>
<td>none set</td>
</tr>
</tbody>
</table>

**Notes:** A large number of SOLAs will be issued replacing uses formerly approved under the Long Term Arrangements for Extension of Use (LTAEU). Please check the PSD website.
* Application must not be made during flowering. Herbicides MCPB, bentazone/MCPB, MCPB/MCPA and cyanazine are also approved post-emergence for Broad Beans by extrapolation but they will cause crop damage.

No seed treatments used for Vining Peas are allowed to be used on Broad Beans through extension of use.

# Maximum dose rate 2.5 L/ha. Do not apply if the plumule is less than 13mm from the soil surface.
Appendix 10  PGRO Publications

The following is a list of PGRO publications applicable to broad bean production:

- Reaction of varieties of green beans, broad beans & field beans to herbicides  Inf. sheet 135
- Notes on growing broad beans  Inf. sheet 131
- Choice of herbicides for beans  Inf. Sheet 179
- Checklist of fungicides & insecticides for beans  Inf. sheet 174
- Varieties of broad beans: Descriptive List  Advisory leaflet
- Pea and bean weevil *(Sitona lineatus)*  Inf. sheet 164
- Tenderometer standardisation & maintenance  Inf. sheet 141
- Bean seed beetle *(Bruchus rufimanus)*  Advisory leaflet
- Pests & diseases of peas & beans  Booklet
- Herbicide damage in peas & beans  Booklet
- Stem and bulb nematode  Inf. sheet 168
- Field thrips in peas and beans  Inf. sheet 163
- Fungicides for beans  Inf. sheet 167

PGRO publications are available from:

The Information Officer, PGRO, Thornhaugh, Peterborough, PE8 6HJ.
Tel: 01780 782585  Fax: 01780 783993 or  [www.pgro.co.uk](http://www.pgro.co.uk)
## Appendix 11 Control Points: Beans (Broad, Processed)

### CS.61 BEANS (BROAD, PROCESSED)

<table>
<thead>
<tr>
<th>Control Point</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS.61.1</td>
<td>Can you provide evidence that your seed has been tested for the presence of Ascochyta fabae - Protocol reference: Section 8.10.2.4</td>
<td>1</td>
</tr>
<tr>
<td>CS.61.2</td>
<td>Can you provide evidence that your seed has been tested for the presence of stem and bulb nematode - Protocol reference: 8.10.1.2</td>
<td>1</td>
</tr>
<tr>
<td>CS.61.3</td>
<td>Do you have a policy for reducing volunteer problems for oilseed rape and potatoes by using appropriate husbandry practices after harvest of these crops - Protocol reference: 8.10.3.2</td>
<td>1</td>
</tr>
<tr>
<td>CS.61.4</td>
<td>Can you demonstrate that you monitor the development of chocolate spot to justify fungicide application - Protocol reference: 8.10.2.3</td>
<td>3</td>
</tr>
<tr>
<td>CS.61.5</td>
<td>Can you demonstrate that you monitor the development of downy mildew in order to justify fungicide application - Protocol reference: 8.10.2.2</td>
<td>3</td>
</tr>
<tr>
<td>CS.61.6</td>
<td>Can you provide evidence to show you know the soil type (ADAS classification) when deciding on dose rates of residual pre-emergence herbicide - Protocol reference: 8.10.3.1</td>
<td>1</td>
</tr>
</tbody>
</table>