

## Value of Pulses (Beans/Peas) in the rotation

Pulses can provide a substantial rotational benefit to subsequent cereal crops:

- Pulses are nitrogen fixing crops and require no nitrogen fertiliser
- Provide a disease break for cereal crops
- Pulses leave a residue of between 25 and 50 kg N/ha which can be utilised by the following crop
- Peas are suited to medium to light soils and beans to medium to heavy soils.

### **Field Beans (Vicia Faba)**

Varieties of Choice for Spring Beans (Fuego and Fanfare)

#### **Spring Beans**

Beans perform better in wet years and on heavy soils than peas. Medium to heavy soils are most suited for beans. Very light soils should be avoided.

#### Sowing

Beans can be sown from Mid-January until the end of March. Seeds should be shown to a depth of 10 cm in January/February, 7.5 cm in early March and 5 cm in late March. Beans do not require a very fine seed bed but a poorly tilled seed bed may reduce the pre-emerge herbicide weed control.

#### Fertiliser

Beans are a nitrogen fixing crop and require no nitrogen fertiliser. A pH of 6.5 to 7 is essential for beans as they do not tolerate acidic conditions. Recommended fertilizer rates are set out below in table 2, fertilizer decisions should be based on a recent soil test and the advice of your agronomist. In terms of micro-nutrients, it is important that levels of Magnesium, Zinc, and Manganese are adequate and not deficient. Traditionally 3 X 50 kg/acre of 0/ 7 /30 (375 kg /ha) were applied at sowing time.

Soil Index	P kg/ha	K kg/ha
<b>Index 1 (very low)</b>	50	125
<b>Index 2 (Low)</b>	40	60
<b>Index 3 (Medium)</b>	20	40
<b>Index 4 (High)</b>	0	0

#### Seeding Rate

Seeding rate depends on the TGW of bean seed - recommended sowing rate as follows:  
Target plant population for Spring Beans is 35-40/m<sup>2</sup>

$$\text{Seed rate kg/ha} = (\text{TGW} \times \frac{\text{target plant population m}^2}{\text{germination (\%)}}) \times (\frac{100}{100} - \text{field loss})$$

\*Example: Bean seed with TGW of 600 and target plant population of 35/m<sup>2</sup>

$$(600 \times \frac{35}{90}) \times (100/90) = 260 \text{ kg / ha seeding rate}$$

Seed TGW	Target m <sup>2</sup> Plant Population	***Sowing rate Kg/Ha
500	35	216
550	35	238
600	35	260

\*\*\* assume germination 90 % and field loss 10 %

### Weed Control

The range of herbicides available for use on beans is somewhat limited and pre-drilling weed control with glyphosate is essential for controlling perennial weeds (scutch, field bindweed, creeping thistle etc.). Beans can suffer from early season weed competition, especially if charlock or vol. rape is numerous. Growers should prioritise pre-emergence weed control immediately or very soon after drilling. The main bean herbicides are Stomp Aqua, Nirvana and Lingo. Basagran is an option post-emergence of the beans but its spectrum is limited and it is very dependent on weather conditions at application time. A graminicide will help control any grass weeds, wild oats and scutch. Contact your local agronomist for advice.

### Disease Control

- *Chocolate Spot*: Appears as reddish brown spots and can enlarge particular in cool wet weather. Fungicidal treatment may be required if symptoms appear at first bud or early flower.
- *Leaf and pod spot*: A seed borne disease. Some control may be achieved with fungicide application.
- *Downy Mildew and Rusts*: most varieties are susceptible to these diseases. Rusts can be controlled at flowering and pod set using recommended fungicides.
- Beans have a limited range of fungicides, which are mainly preventative in action. Growers should walk crops regularly consult with their agronomist, especially as the flowers develop.

### Pests

- Bean seed should be checked to ensure that is free of Nematodes- prior to sowing.

Birds are the major threat to beans for the first few weeks after sowing. Good field hygiene, proper sowing depth & early vigilance is vital. Pea & Bean Weevil damage (notches on leaves) should be monitored from the 2 leaf stage until flowering. Black Bean aphids appear in crops and should be controlled.

## Varieties

Seedtech have native and imported Fuego to offer and also imported Fanfare. Both Fuego and Fanfare have been included in Department of Agriculture official trials for the past three years with Fanfare coming out as the highest yielder and Fuego running close up behind.

### Fuego

- ✓ Showing excellent yields in Irish department of agriculture trials
- ✓ Has better Downey Mildew Resistance than Boxer and Fanfare
- ✓ Excellent standing ability

### Fanfare

- ✓ Highest yielding varieties in 2 years of Irish Official trials
  - ✓ Earlier ripening than Boxer
  - ✓ Higher protein content than Boxer or Fuego
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## Peas

The first step is to determine what market the Peas crop is intended for; all peas are suitable for animal feeds.

Examples of different types of peas:

- White Peas - Seed coat white /yellow, smooth and round. Generally used for animal feed.
- Large Blues - Seed coat blue /green, large and round. In addition to animal feed large blues can be sold for human consumption.
- Small Blues - Seed coat blue/green, smooth and round. Can be used for canning.
- Marrowfats - Seed coat blue/green, large, dimpled seed. Used mainly for human crop consumption.

### Crop Husbandry

It is recommended the peas are grown in a rotation of 1 year in five with other pulse crops.

### Sowing

Peas are suited to medium to light soils and compaction should be avoided. In most cases peas can be sown using a one pass system, direct drill or in a min till situation. Sowing depth of at least 3 cm.

### Fertiliser

No Nitrogen is required. P and K as required should be tilled into ground before sowing.

### Seeding Rate

This is dependent on TGW and on conditions at sowing but general guidelines are given below.

### Seeding rate formula

$$\text{Seed rate kg/ha} = (\text{TGW} \times \frac{\text{target plant population m}^2}{\text{germination (\%)}}) \times (\frac{100}{100} - \text{field loss})$$

Guide plant population / M2 = 65/70 plants /m2. (**N.B.** varieties like Zero 4 have a target plant population of 100 /m2.)

### Sowing

Benefits of early sowing can include higher yields. It is important to drill peas when soils are drier and less prone to compaction. Peas can be sown mid-March to mid/late April.

### Weed Control

There are a number of both pre and post emergence herbicides available in the market.

### Diseases

- *Downy Mildew*: Fungicide seed treatment combined with varietal resistance can reduce this risk.
- *Leaf and Pod Spot*: Disease free seed combined with fungicide treatments give useful control of the disease.
- *Botrytis*: This effects stem and pods during wet weather. Fungicidal treatment may be required at pod set.

### Aphids

An aphicide is generally included with fungicides to prevent aphid damage.

### Pests

Pigeons can cause damage by grazing early sown pea crops. Other pests such as *Pea Aphid* should be controlled as soon as colonies are found. *Peas Cyst Nematode* is a soil borne pest and adequate rotation is essential to minimise risk.

**Certified seed should ALWAYS be used as it will exceed minimum germination levels required and ensure that seed is uniform and fit for purpose.**