PEA
GROWING GUIDE

United Oilseeds
THE LEADING BREAK CROP SPECIALIST

Introduction

When planning to grow peas, the first step is to identify the target market. Many high-quality pea varieties cater to premium markets, though all varieties can be used in animal feed.

Marrowfat varieties for human consumption typically yield less and are costlier to produce, but they can fetch a premium price. Another viable option is growing combining peas for seed production.

Selection and Use of Seed

In the UK's Seed Certification Scheme, seeds are classified into three grades:

B - Basic **C1** - Certified Seed of 1st Generation **C2** - Certified Seed of 2nd Generation

Basic and C1 seeds are typically used for producing further seed crops, while C2 seeds are intended for commercial crop production. Basic seeds are the most expensive, with C2 being the least costly. All certified seeds must meet a minimum germination rate of 80% and adhere to strict purity standards.

Disease Considerations

Leaf and pod spot (Ascochyta), caused by Didymella pinodes and Ascochyta pisi, is a serious seed-borne disease that can impact both yield and quality. However, it's important to note that the statutory certification scheme does not specify minimum infection standards for this disease. Growers can obtain seed tests from PGRO to assess the risk.

Seed Rate and Plant Population

Target populations should be tailored to the specific pea variety being sown, with optimal populations determined by seed cost and expected yield per hectare. Adjustments should be made based on soil fertility and conditions. Lower populations might be sufficient on fertile soils, while higher populations could be advantageous on light, drought-prone soils, or where bird damage is a concern.

Talk to your local Area Manager or get in touch for further details

Tel: 01380 729200 Email: hello@unitedoilseeds.co.uk

Typical populations

Marrowfats: 65-70 plants per m2

Green & Yellow: 80-90 plants per m2

Crop Agronomy

To minimise the risk of persistent soil-borne diseases like foot rots, peas should be grown on the same field no more than once every five years. Limited information exists on whether the same pathogen strains affect other legume crops. And therefore, as a precaution, it is advised to maintain a five-year interval between planting field beans, broad beans, green beans, and peas.

Cultivations

Land is often ploughed in the autumn to allow natural weathering to create a suitable seedbed in the spring with minimal cultivation (stale seedbed). Peas are sensitive to soil compaction, so on lighter soils, spring ploughing can be an option, especially when over-wintered stubbles are needed. In such cases, drilling with a cultivator drill on spring-ploughed land is a common practice. In some situations, peas can also be successfully established using direct drilling or minimal tillage techniques.

Fertiliser

Peas have modest fertiliser needs, with no nitrogen required.

When applying phosphorus (P) and potassium (K) fertilisers, they should be placed deep enough in the seedbed to ensure the crop can fully utilise them. If broadcasting fertiliser, it should be ploughed shallow or applied over the furrows, then incorporated with subsequent cultivations. However, avoid creating too fine a seedbed or causing soil compaction.

Peas may experience sulphur deficiency, particularly on soils with low organic matter or poor, light-textured soils. High winter rainfall can lead to increased sulphur leaching, while soil compaction or cool weather can limit root development and restrict sulphur uptake. To accurately predict sulphur deficiency, tissue analysis should be used in conjunction with soil analysis, as soil tests alone may not be sufficient. If a deficiency is suspected, apply 25-35 kg/ha of SO_3 as a pre-drilling treatment using magnesium sulphate, calcium sulphate, potassium sulphate, or elemental sulphur.

Phosphate and potash application rates should be tailored to expected pea yields of around 4 t/ha. If yields are expected to be higher or lower, adjust the fertiliser amounts accordingly.

Time of drilling

As with many crops, drilling to the conditions is the key. Peas should be drilled when soils are drier and less prone to compaction. There are of course potential benefits to early drilling such as higher yield, earlier maturity and some avoidance of pests.

Row width and plant population

The normal spacing for peas is up to 20cm rows where narrower rows result in greater yields, easier combining, better weed suppression and a more even crop. In spacing no wider, you ensure that the crop is better able to withstand pressures such as bird damage and late maturity.

Drilling and rolling

Most cereal drills are suitable for sowing peas. It probably goes without saying that your drill should be accurately calibrated for each seed lot before sowing.

Standard practice is for seeds to be sown so that they are covered by at least 3 cm of settled soil after rolling. On most soil types it is necessary to roll the field to depress stones in order to avoid damage to the combine, and for effective pre-emergence weed control. Rolling should be done soon after sowing, but prior to the application of pre-emergence herbicide application and well before emergence.

Harvesting

Peas can be harvested when the seed moisture content reaches around 18%. For higher-quality seed and human consumption, it's often best to combine early, at 18-20% moisture content, followed by careful drying. This approach helps prevent damage to the seed coat and reduces the occurrence of non-soakers.

If the peas are intended for animal feed, they can be combined at lower moisture levels, which reduces drying costs. However, harvesting at moisture levels below 15% can lead to seed splitting, although split peas are still acceptable for animal feed. Harvesting at very low moisture content may also significantly reduce the recoverable yield due to pod shattering and shelling out.

Monitoring moisture content is important for determining the optimal combining stage (25% or less), for grain storage (14-16%), and for long-term storage (14-15%).

Combining

Whenever possible, peas should be direct combined using a cereal combine, without pre-harvest weed management. This is feasible during a dry harvest when the crop is weed-free and drying down evenly.

Most pea varieties tend to lodge before harvest, although semi-leafless and stiff-strawed types are less prone to this. Long-strawed varieties are easier to harvest, and a uniform, adequate plant stand is advantageous.

When harvesting lodged crops, combine in the opposite direction or at an angle to the lodging. Lifting fingers are essential, with at least one installed every fourth position. Adjustments may be needed to lower the cutter bar close to the soil surface. The reel should be positioned slightly forward of the cutter bar, and its speed adjusted to lift the crop onto the platform.

For combine settings, peas are relatively easy to thresh, so the drum speed should be set low according to the manufacturer's recommendation. The concave should be opened up to reduce the time the crop is in contact with the drum, and a high fan setting should be used. Ensure the appropriate screen size for peas is installed.

Efficient lifters are helpful for badly lodged crops, and it may be necessary to combine in only one direction.

To maintain quality, avoid combining when there is surface moisture on the haulm or when the soil is wet, and ensure the combine is clean to prevent soil contamination.

Peas can typically pass through most combines without damage when the seed moisture content is around 20%. Early harvesting at 18% helps avoid bleaching, shelling out losses, and splitting, as well as deterioration in quality for human consumption or seed crops during wet weather. For animal feed, harvesting at around 16% moisture content will help reduce drying costs.

Weed Management

If the crop is very weedy, combining can be facilitated by killing the weeds beforehand. Currently, glyphosate is the only material available to prevent further weed growth before harvest, making combining less troublesome and more efficient. However, it works relatively slowly.

The pea seed moisture content should have dropped below 30% before applying glyphosate. Treatment should be delayed until the peas on the least mature plants have reached the 'starchy' stage, where they can be marked .....

by a fingernail and do not easily split. At this stage, the top pods will be pitted and wrinkled, while the lower pods will be at the parchment stage, with foliage beginning to yellow.

Harvesting should be possible 10-14 days after glyphosate application, or slightly sooner if weather conditions are favourable.

Pea Drying and Storage Guidelines

Proper drying and storage are essential to maintaining the quality of peas. Standard requirements typically include 14% moisture content and 2% impurities at the farm level. A combined value of these factors should not exceed 16%.

For peas intended for human consumption, drying temperatures should not exceed 49°C if the moisture content is below 24%, or 43°C if the moisture content is higher. Higher temperatures can cause tougher textures or splitting of the grain. For seed peas, temperatures should not exceed 43°C when moisture is below 24%, or 37°C when moisture is higher.

In cases of high moisture content, peas may need to be dried twice, with a two-day gap between drying sessions to allow moisture to redistribute evenly.

Drying Methods

Any type of dryer may be used, but those operating at low temperatures are generally safer.

Floor-ventilated bins are simple and safe to use. When moisture levels are high, transferring peas between bins and using warmed air with good ventilation helps prevent mould in the upper layers.

Radially-ventilated bins offer faster drying, but caution is needed to avoid overheating the peas.

On-floor drying with ambient or warmed air is effective, provided sufficient airflow and ventilation are maintained. Even peas with relatively high moisture content can be dried using this method. Continuous flow dryers operating on a short-term, high-temperature basis require more careful handling than other systems.

Storage Guidelines

Safe storage of peas depends on their moisture content, the storage method, and the duration. Peas with 17% moisture content can be stored for up to 4 weeks.

However, for storage until the following spring, moisture content should not exceed 15%. If the peas are stored in bulk with forced ventilation or frequent movement, moisture content can be up to 1% higher.

Quality Standards

Peas are generally held to a standard of 14% moisture content and 2% impurities. If these levels exceed 16%, deductions are often applied. Drying is carried out either on the farm or by merchants, who may reduce the value of peas with moisture content above 16%.

Peas for pet food micronizing should have a good blue/green colour. Peas intended for animal feed should be dry (around 15%) and free from moulds. Split or stained peas do not significantly affect their value.