

## Seeding Tips for Peas

Donna Fleury, P.Ag

Field peas are an important rotational crop for many producers. Dr. Tom Warkentin, Professor, Crop Development Centre/Department of Plant Sciences at the University of Saskatchewan provides seeding tips for growing peas this spring.

### Seed Early

Plan to seed peas early in mid-April to mid-May, as soon as the soil temperature reaches 5°C. Pea seedlings have good frost tolerance and have survived temperatures of -4°C to -6°C. Even if frost is severe enough to kill the main shoot, the pea plant can re-grow from one of the scale nodes at or below the soil surface. Although peas can be seeded at soil temperatures of 5°C, emergence is going to be quicker as the soil warms up.

One of the most important factors is to plant peas into moist soil. Seeding early into good moisture helps establish good plant stands early, which should advance crop maturity and encourage flowering prior to high summer temperatures. Heat during flowering can reduce seed set and yield.

### Seed Quality

Start with high quality seed for establishing a rapidly emerging, vigorous stand, and producing a high quality, profitable crop. Good quality seed will have a good germination rate and good vigour. Planting high quality seed should increase tolerance to seedling diseases, promote rapid and uniform stand establishment, and enhance tolerance to early seasons stresses such as adverse temperature and moisture conditions.

### Seed Handling

Peas, like most of the pulse crops, require gentle handling and are susceptible to mechanical damage during seeding, harvesting, handling, and storage. Dry pea seed (14% or less seed moisture) is brittle and difficult to handle without chipping and splitting the seed, which could lead to loss of germination, as well as an increase in susceptibility to disease. Even nearly invisible seed cracks can result in a reduction in germination or increase in seed rots.

### Seeding Rate

Using recommended seeding rates and establishing an optimal plant stand is important for maximizing yields. The recommended seeding rate for peas is a target plant stand of 75 to 85 plants per square metre or seven to eight plants per square foot. Rates can be adjusted higher or lower depending on the conditions in the field, date of seeding, weed pressure, and other pressures that may affect emergence or plant stand. Growers are reminded that the seed size of varieties do differ by quite a bit, which can affect the seeding rate. When determining seeding rates consider the thousand kernel weight and target plant stand.

### Seeding Depth

The optimal seeding depth for peas is three to eight centimetres (1.2-3.2 inches). Peas should be seeded into at least an inch of moisture, and if topsoil conditions are dry, peas can be seeded three inches deep. Peas require moisture for the seed to swell and germinate, swelling to at least twice its normal size. They take over three times more water for germination than small grains. Row spacing for peas, like other pulses, are flexible. Peas can perform well in 6-12 inch row spacing and depends more on the seeding equipment used in individual operations.

### Seed Treatment

Ontario Seed treatments should be considered if seeding into cooler, wetter soils or in situations where seed germination test scores a bit lower than desired, or where disease is present on the seed. For *Ascochyta* blight, a seed treatment is recommended if the disease level on the seed is above 10% as the seed-to-seedling transmission of this disease is low in peas. For other diseases such as *Sclerotinia*, *Botrytis*, and *Fusarium*, add the levels together and if the combined seed-borne total of all three exceeds 10%, then seed treatment is recommended.

In pea and lentil growing areas *Aphanomyces* root rot has become a concern, especially under wet conditions and/or where shortened rotations have been used. In high risk fields, such as where *Aphanomyces* has been positively identified, growers may want to consider a seed treatment with activity against this pathogen. The current recommendation for *Aphanomyces* root rot is to extend the rotation for peas or lentils, which are both susceptible, to a minimum of one in six to eight years in fields where *Aphanomyces* root rot has been detected.

### Inoculation

Peas inoculated with the proper *Rhizobium* (bacterial) strain has the potential to fix up to 80% of its nitrogen requirement through nitrogen-fixation. Using an inoculant increases the chances of having good nodulation on a pea crop and thereby getting a good amount of nitrogen-fixation by the crop. Inoculants are available in different formulations, including liquid, powder, and granular. Using a good inoculant is important, and make sure to manage the inoculant carefully to keep it in good shape. Inoculants are a live culture and should not get too warm or too dried out to maintain effectiveness.

If using seed treatments, then follow inoculant guidelines carefully. For example, if using seed treatments and liquid or peat based inoculants, allow the seed treatment to dry before applying the inoculant to the seed. Do not apply seed treatments and liquid/peat inoculants at the same time unless recommended by inoculant manufacturer.

### Fertility

Pea seed is quite sensitive to seed-placed fertilizers. Warkentin recommends that growers try to avoid seed placing fertilizer. If a grower plans to apply phosphorus or other fertilizer blends, he suggests using the technology they have on their farm to keep fertilizer itself away from the seed, such as side banding or some

other method. Peas, like most pulses, usually do not require nitrogen fertilizer because they fix their own. However under very low soil nitrogen levels below 15 pounds per acre (lb/ac) (17 kg/ha), starter nitrogen up to 18 lb/ac (20 kg/ha) may be of benefit.

Peas are one of the most sensitive crops when it comes to seed-placed fertilizer, with 15 lb/ac (17 kg/ha) of phosphate ( $P_2O_5$ ) being the maximum that can be put in the seed row without a significant reduction in emergence. Some starter phosphorus in the seed row below these limits may be fine. For potassium ( $K_2O$ ), use the  $P_2O_5$  guidelines making sure the total amount of  $K_2O$  plus  $P_2O_5$  does not exceed the minimum safe rate for seed placement. For more information on seed placed fertilizer, see [Guidelines for Safe Rates of Fertilizer Placed with the Seed](#) from the Saskatchewan Ministry of Agriculture.

### Rolling

Pea fields should be rolled to provide a smooth and level surface to improve harvest efficiency and reduce earth tag. The best time to roll is immediately after seeding, as soon as the soil surface is dry. Land rolling after crop emergence can be successfully completed up to the fifth to seventh node stage without significant yield loss and is suggested to be done when the plants are slightly wilted and soil surface is dry. Land rolling past this stage can damage plants, increase the spread of foliar diseases, and reduce yield.