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Getting Your Lentil Crop Off to a Good Start

Neil Whatley

Some farm producers are considering adding lentil to their cropping plans this year. This is a unique crop and first time growers cannot expect high yields but can achieve optimal yields by following some basic guidelines. In a previous article I wrote about the importance of lentil in a crop rotation, field selection and characteristics of lentil varieties and market classes. This article contains production management tips to get the crop off to a good start at seeding time.

Ascochyta blight is the main plant disease to be concerned about with lentil production and can be seed-borne, along with other seed-borne diseases like botrytis and anthracnose. A seed test can determine if seed is infected with these diseases and with the case of ascochyta, treat with a fungicide if the seed tests higher than 5% ascochyta in the Brown and Dark Brown soil zones and higher than 0% in the thin Black soil zone. If a fungicide is necessary, consult with the Crop Protection Guide (Blue Book) for appropriate seed treatment fungicides. Apply the fungicide to the seed first, allowing it to dry before applying a nitrogen-fixing inoculant.

A soil test provides the best guideline for fertility requirements. Nitrogen fertilizer is generally not required if lentil seeds are properly inoculated with the correct strain of *Rhizobium* inoculant. As a rule of thumb, if the soil contains less than 20 lbs/acre of phosphorus, top it up with 20 lbs of P/acre. Do not apply more than 20 lbs/acre of actual P with the seed (based on 1 inch spread, 6 to 7 inch row spacing and good to excellent soil moisture). If conditions are drier, apply less fertilizer with the seed.

Lentil flowers can abort with hot July heat causing yield decrease, which can be avoided by seeding earlier. Late April and early May seeding is common, especially since young lentil seedlings can withstand a couple spring frosts.

The appropriate plant population for lentil production is 12 plants per square foot. Less than this density may result in poor weed competition and greater than this density may result in disease risk. To calculate the correct seeding rate for the particular lentil variety you are growing, refer to the seed weight guide (g/1000) in Alberta's Seed Guide (www.seed.ab.ca). Use this seed weight in the seeding calculator for pulse crops that is located within the "decision making tools" on the Ropin' the Web web-site (www.agric.gov.ab.ca). Alternatively, the following calculation can be used:

$$\frac{(12 \text{ plants/ft}^2 \times 1000 \text{ seed wt. g}) \times 10}{\% \text{ field emergence or survival}}$$

Lentil seeding depth should be at the depth of soil moisture with an emphasis on shallow seeding so the lentil crop can stay ahead of weed seed germination. Lentil seeds can be planted as deep as 3 inches if necessary to find moisture, but it is preferable to seed shallower. Regardless of seeding depth, be sure the seedbed is firmly packed above the seed placement depth.

Mature lentil plants produce pods that hang near to the soil surface necessitating land rolling after seeding to ensure more ease of harvester cutter bar passage at harvest time. Determining the correct lentil plant node stages to roll and to apply a herbicide is important and I will address this guideline in another news article.

April 30 Crop Insurance Deadline and New Hail Option AFSC

With so much uncertainty around prices and weather, provincial crop analyst Charlie Pearson says it's a good idea for farmers to look at options such as crop insurance and locking in some prices now in case they dip lower by the fall.

April 30 Deadline

He advises producers to consider tools such as forward delivery contracts with grain companies, which guarantee prices for grain delivered this fall; or the Spring Price Endorsement (SPE) rider on crop insurance, which protects farmers if prices decline 10-to-50 per cent between spring and fall. Pearson notes the deadline to apply for crop insurance in Alberta is **April 30**.

SPE paid out \$80.5 million following the price drop in 2009 – the highest payout in 10 years, says Lorelei Hulston, Provincial Insurance Manager for Agriculture Financial Services Corporation (AFSC), the provincial Crown Corporation that administers crop insurance in Alberta on behalf of the provincial and federal governments.

New Crop Insurance Option

A major change to crop insurance this year is the option to elect Straight Hail coverage at the same time you purchase regular crop insurance, says Hulston. "Until now, producers had to wait until their crops emerged to purchase Straight Hail Insurance. If they waited too long and their fields were damaged more than 25 per cent by early hail, they were no longer eligible for Straight Hail coverage on those fields for the rest of the year."

"The new Auto Elect option eliminates that risk because your hail coverage can now be in place before April 30," says Hulston. "So when your crops emerge, you won't be caught off guard by early hail. On average, we see about 150 hail damage claims each year across the province before June 15." She says producers who choose Auto Elect receive a two per cent discount on their Straight Hail premium. Hail damage, low grain prices, and cool, dry conditions were to blame for most of the \$444 million paid out in crop insurance claims last year across the province, she adds.

Producers with questions about crop insurance can call their nearest AFSC office or the AFSC Call Centre at 1-877-899-AFSC (2372) before the April 30 deadline.

Seed Testing – Low Germination in Pulses Western Producer

An article in the Western Producer indicates that germination tests of some pea and lentils seed from the 2009 crop year are indicating lower germ than is optimum. Syngenta is recommending that in areas where Reglone was used outside of label recommendations, ie. Before the seed was mature, then seed lots should be tested at professional seed labs to ensure germ and vigour is adequate. Seed treatments and optimum seeding conditions can help to provide a good start for the crop, but germination and vigour are important factors in ensuring a good crop stand.

Soil Temperatures & Seeding - FAQs Saskatchewan Agriculture

At what temperature should the soil be before I start seeding?

The optimum soil temperatures for most spring seeded crops are warmer than 10°C. Planting all crops at lower soil temperatures will delay emergence.

Various crops, however, will germinate at various ranges of soil temperatures.

Peas and lentils are quite cold tolerant. They can be planted when the average soil at the depth of seeding reaches five degrees Celsius (5°C). Desi chickpea can also start to germinate at about 5°C. However, large kabuli chickpea, dry bean and soybean do not germinate and emerge well at these cool temperatures. Kabuli chickpea, dry bean and soybean should not be planted until the average soil temperature at the depth of seeding reaches 10°C.

Research has indicated that canola and mustard will germinate at temperatures as low as 2°C. Flax can germinate at temperatures as low as 3°C or 4°C. Cereal crops such as wheat and barley are also quite cold tolerant and can be seeded at about 4°C to 5°C.

How do I measure soil temperature?

Determine how deep you will be placing the seed. Then place your thermometer at the depth of seeding. Take two measurements throughout the day: one in the morning and one in the early evening. Average the two readings to determine average soil temperature at depth of seeding. Take readings in a number of locations in the field, especially if the field is rolling and variable.

Which crop should I seed first if I am concerned about a spring frost?

There is no definitive answer. Different crops have different susceptibilities.

Peas and lentils can germinate at lower temperatures and take a little longer to absorb sufficient moisture and so could be an early seeding choice.

Seed Treatment Overview Alberta Agriculture and Rural Development

Why Should I Use a Seed Treatment?

Producers should consider seed treatments like an insurance policy for establishing the best crop possible given the growing conditions at the time. If conditions are good for crop establishment, seed treatments may not be needed. However, if growing conditions at establishment are not ideal the benefits of using a seed treatment will often more than pay for themselves.

What are the factors to consider when choosing a seed treatment?

- Do you seed into cold soil under reduced tillage systems? Soil temperatures at seeding time are typically lower than with conventional systems. Soil temperatures around 5°C which are often found at seeding time with reduced tillage systems, are warm enough for crop germination and emergence, but are not ideal. Colder soil delays crop establishment and gives seed and soil born diseases an opportunity to infect the plant. A seed treatment will protect the plant from many seed and possibly some soil born diseases in these slow growing conditions.
- Has your seed been tested for seed born diseases? Your seed may be infected with a disease that was in the crop it originated from. A good seed treatment will prevent most seed born diseases, like fusarium and smuts, from developing. If you bought pedigreed seed, the seed certificate of analysis should tell you if any diseased kernels were found and of which disease.
- Do you have insect pressure at seeding time historically and presently? Although you can apply a foliar insecticide to control flea beetles, a seed treatment that contains an insecticide will protect the plant from insect damage from first emergence to several weeks after emergence.
- What is your crop rotation? Similar crop types grown in successive years promote disease inoculum build up in soil. Some seed treatments can minimize the potential losses of a few of these soil born diseases, but it is still advisable to avoid growing the same crop type in successive years. By following a proper crop rotation and using a good quality seed treatment, you will not only protect the crop currently being grown but you will also avoid a build-up of disease inoculum in the soil for the crop type in the future.

What are the benefits of using the new seed treatments?

In recent years, the number of seed treatment products available to producers has increased greatly. The new products have several key benefits or advantages over the older products.

- One key benefit is lower dose and use rates. This decreases the amount of product that needs to be used and reduces environmental exposure to the user.
- Many new seed treatments contain several active ingredients with different modes of action. This has allowed manufacturers to develop seed treatments with higher efficacies and a broader range of diseases and insects that they control.
- Most of the new seed treatments are water based and are in ready to apply or RTA formulations. This allows the individual applying the seed treatment to handle the product with more ease and makes cleaning the treating equipment easier as well. In addition to the ease of use, the exposure of the applicator to the treatment is reduced as the older solvent based seed treatments required applicators to take precautions for avoid illness due to fumes.

Can seed treatments be used in combination with inoculants?

Depending on the application, some seed treatments can be used with other seed treatment products. This would be most commonly used in pulse production where a fungicide seed treatment may be applied along with an inoculant product. Always check with the manufacturer's

label of both products to ensure that they are compatible and are registered uses.

What are the best methods of applying seed treatments in pulses?

Applying the seed treatment has two requirements, proper product volume and seed coverage. Before treating, knowing the capacity of the auger or conveyor is important. Knowing the capacity of the auger or conveyor will allow you to determine what volume of product will need to be applied to ensure the proper product rate is used. Determining the capacity of your auger or conveyor can be done by consulting the equipment manufacturer or by loading grain with the equipment and recording the length of time to load the volume of grain. By weighing this sample, determining the loading capacity can be calculated for any grain type. For seed coverage, using an applicator tip such as a nozzle of known volume output and pressure is needed. Spreading out the product flow across the seed being treated will allow for maximum coverage and efficacy. The most accurate seed treating applicators employ a positive pressure pumping system and nozzles which can be calibrated for any given seed treatment. These systems ensure proper product volume and seed coverage.

Why is seed treatment product rate and coverage important?

Seed treatment product rate and coverage is important for cost and efficacy. By over applying the product, the cost per treated seed unit will be higher yet providing no additional benefits and may cause harm to the seed. Not achieving proper seed coverage will affect efficacy and the benefit of the seed treatment will not be realized.

Previous PAN Bulletins

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