FIELD FACTS

PIONEER agronomy

Tips for Planting Large Canola Seed

Doug Moisey, Area Agronomist

Introduction

Planting rates are affected by seed size so it is important to know the thousand seed weight (TSW) of the seed you have purchased so that you can estimate your final plant stand.

What has the Research shown on Seeding Larger Canola Seed?

Research conducted by Ag Canada has shown average emergence is 50% however that will go up as seed weight increases. Research by Bob Elliot of AAFC has shown that comparing low TSW seed of 2.1 to 2.5 g will typically have lower emergence and vigor than 4 gram/TSW, however new research is looking at the next level which is the 6 gram/TSW and higher. In looking at this question it would be safe to assume that larger seed will have higher survivability and emerge more vigorously. The question is always what will be the survivability of large seed. Many factors can contribute to emergence levels but with large seed potential can be 65% to as much as 85% with germ % taken out

The following are factors to consider when seeding large seed weights:

1. Soil Moisture- larger seed requires more moisture to germinate so in drier seedbed conditions you may see delay in emergence or seed crack then death due to lack of moisture

2. Fertility with the seed - this is critical as the salt affect prevents imbibing of water but can also lead to Ammonium toxicity

3. Soil temperatures- Seed sown into soil temperatures below 5 °C affect germination as well it can contribute to enhanced disease load as a result of slow growth. Another affect can be a reduction in the effectiveness of the insecticide portion of the seed treatment due to delayed emergence and the dilution affect

4. Soil and Trash – Soil types (heavy clay, light sandy soil) as well as trash can affect emergence. Although clay soils tend to hold water the effect can be crusting or packing if seeded to soon. Sandier soils tend to stay cooler longer. Trash can keep soil temperatures cool for extended periods of time

What is the Correct Seeding Depth for Canola?

Depth of Seeding – it is still critical to seed canola in the ½" to 1" layer below the press wheel furrow. AAFC has recently finished a 4 year study with the newest hybrids and seed depth is one of the most critical factors for even and high survivability emergence

There are many other factors that can affect emergence from opener type, moisture in the form of rain within 7 days of seeding on either side, to rotation (i.e. Canola on Canola).

Tips to Maximize Seed Emergence

The following are some tips to maximize seed emergence with large TSW:

1. Consider seeding smaller seed lots <5g TSW first to allow soil temperatures to warm up.

2. Seed Depth is critical target the ¾" to 1 inch below the press wheel furrow.

3. Place a minimal amount of P_2O_5 with the seed to give a quick pop up affect.

4. Look at minimizing the amount of Nitrogen and sulfur with the seed. If you need to keep higher amounts of nutrients with the seed, then consider products that can safen the blend or consider alternative forms of applying the fertility.

5. "Mudding In" or pushing the soil can result in crusting that can affect emergence. In an effort to cover acres the temptation is to seed as soon as the field can support the equipment, however this usually results in poor seed placement and crusting issues.

6. Speed does affect emergence. Seeding speed is a factor that can play a role in depth but as well can create damage from the aspect as the faster the speed typically the more product per unit of time which can create seed damage.

7. Calibrate your drill between seed lots when the difference in TSW of more than 1gram/TSW.

Formula for Setting Canola Seeding Rate Based on Seed Size:

Use this formula to set a seeding rate based on seed size:

Seeding Rate (lb/ac) = [9.6 x desired plant density (plants/ft2) x TSW (grams)] ÷ estimated seed survival (%, expressed as a whole #)

Example: If seed is 4 grams per 1,000, desired plant population is 10 plants per square foot, and estimated seed survival is 50%, then the seeding rate should be 7.7 lbs/acre.

(9.6 x 10 plants/ft2 x 4.0 g) ÷ 50 = 7.7 lb./ac. (8.6 kg/ha)

Rates of Survivability: A good starting point is 50 %. However, if the above suggestions are followed use up to 75% survivability (not factoring in Germination).

Quick Summary for Improving Canola Stands

- Examine your openers for wear and tear as well as seals on the tanks.
- How much trash do you have on the field?
- Desired seeding depth – ½ - 1”
- Watch Soil temperatures - Target a minimum soil temperature of 5 °C.
- Slow down seeding speeds – this will allow for more uniform seeding depth.
- Seed place an adequate amount of Phosphate.
- Minimize N and S fertilizer with the seed.
- Calibrate your drill between seed lots (even with the same hybrid) if the difference between seed lots is more than 1 gram.
- Check the air seeder continually throughout the day.

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