

...FROM THE DESK OF  
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CCA 4R

# Between the Rows

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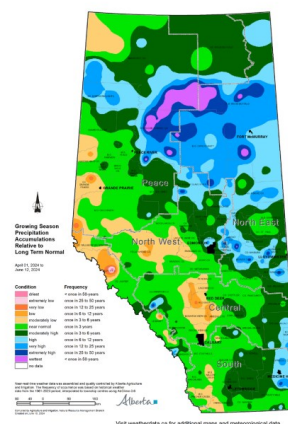
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## Soil Moisture Update

Soil moisture levels across the region remain excellent with most areas at high to moderately high in comparison to the long term normal. With the heat coming on this week, growing conditions are excellent. With these good growing conditions growers should begin to prepare for possible fungicide applications. Already we are seeing some early leaf diseases in cereals and if conditions hold the occurrence of plant diseases across the region are high. High soil moisture reserves combined with a dense canopy will create microclimates inside the crop canopy that will be ripe for disease to develop. Be ready, its going to be big crop year.



## Spraying Update

Spraying is on-going and rapidly progressing this week. Most early seeded cereals and peas have already been sprayed. The first pass of RR canola and some Invigor canola is being done as we speak. For those of you hoping to do just once pass, make sure you are checking the progress of the weeds in your field. The open fall and early spring have led to

several weeds having breakthrough seasons. Cleavers is especially bad in canola field this year. Cleavers can act as a winter annual, which gives it a head start in the spring. If you wait too long to control it, or are waiting for only one pass, cleavers may get too big for adequate control by Roundup or Liberty alone. For a second opinion or another set of eyes to check your field give us a call.



## Boron

# Boron

Boron (B) is a micronutrient critical to the growth and health of all crops. It is a component of plant cell walls and reproductive structures. It is a mobile nutrient within the soil, meaning it is prone to movement within the soil. Because it is required in small amounts, it is important to deliver B as evenly as possible across the field. Traditional fertilizer blends containing B struggle to achieve uniform nutrient distribution. Despite the need for this critical nutrient, B is the second most widespread micronutrient deficiency problem worldwide after zinc.

### Major Functions of Boron in Plants

Boron plays a key role in a diverse range of plant functions including cell wall formation and stability, maintenance of structural and functional integrity of biological membranes, movement of sugar or energy into growing parts of plants, and pollination and seed set. Adequate B is also required for effective nitrogen fixation and nodulation in legume crops.

Boron deficiency commonly results in empty pollen grains, poor pollen vitality and a reduced number of flowers per plant. Low B supply can also stunt root growth. Under severe B deficiency, stunted development and death of meristematic growing points are common. Other common reactions include reduced root elongation, failure of flowers to set seeds and fruit abortion. Low B supply may also adversely affect pollination and seed set, without visible leaf deficiency symptoms.

### Soil Factors Affecting Boron Deficiency in Plants

Boron deficiency is highly prevalent in sandy acidic soils with low organic matter, due to the potential for B leaching. Soils with high adsorption and retention capacity (e.g., soils with high pH and rich in clay minerals and iron or aluminum oxides) are also commonly impacted by B deficiency.

In most crops, B shows very poor phloem mobility. Consequently, B in leaf tissue cannot be transported sufficiently into the reproductive organs (i.e., shoot tips, buds, flowers, seeds, etc.). Because of this poor mobility, keeping soluble B in soil solution during all stages of plant growth, particularly during reproductive growth (e.g., during seed setting), is critical for optimal plant nutrition.

### Environmental Factors Affecting Boron Deficiency

Environmental factors that reduce transpiration, such as high air humidity and low soil moisture, have adverse impacts on xylem transportation of

B. Extended periods of drought impede B uptake by reducing root growth, limiting supply of B from organic matter reserves, and by depressing diffusion and transport of B to root surfaces. Plants under

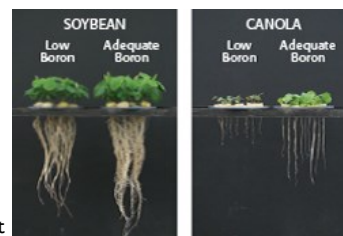
low B supply are more susceptible to damage from high light intensity associated with long and hot, sunny days (see Picture 3). Under B deficiency, use of absorbed light energy in photosynthesis is significantly reduced, leading to an excess amount of energy and potential for leaf damage. Low soil temperature can also reduce root boron uptake.

### Sufficient Boron for Better Root Uptake of Phosphorus and Potassium

Studies show that adequate B nutrition improves root uptake of phosphorus (P) and potassium (K) by maintaining proper function (through ATPase activity) and structure of root cell membranes. Boron has an important role in colonization of roots with mycorrhizal fungi, which contributes to root uptake of P. In short-term experiments with corn plants, reduced root uptake of P and K under low B supply was restored within one hour after B was added to the growth medium. Experimental evidence also suggests that adequate B supply is needed for mitigation of aluminum toxicity in plants grown in low-pH soils.

### Tips for Preventing Boron Deficiency

Soil-test your fields every two years to gain a thorough understanding of the nutrient levels of your field. Make sure to compare your yield goals with current nutrient needs, and discuss options with us. Because there is a fine line between deficiency and toxicity, it's important to apply the correct amount of B at the right rate using the right source.



## A Golden Evolution : The History of Canola

# A Golden Evolution : The History of Canola

By Courtney Jankowski

Have you ever wondered where the beautiful yellow plant that paints our local fields comes from? Canola, a variety of rapeseed, can track its origins almost 4,000 years ago from Asia. While it was primarily used as an edible vegetable oil, during the Second World War rapeseed gained traction in Canada as high-quality lubricant for marine engines.

A shortage of rapeseed during the time and a new ban on trans-fatty acids in food products, lead Baldur Rosmund Stefansson and Richard Keith Downey to create a new low-erucic-acid and low-glucosinolate rapeseed, now known as canola.

Today canola is primarily grown in Alberta, Saskatchewan, Manitoba and southern Ontario. Show off your canola growing skills with the Canola King Challenge 2024!



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- Canola King has to be willing to disclose to other contestants/farmers what farming techniques were used

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**Farming is  
Fun**

