

# AGRICULTURAL BEET

May 7th, 2020

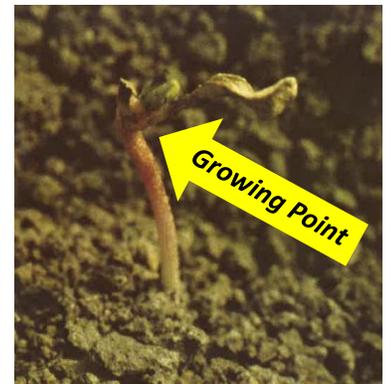
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Foresight is 2020

## Getting prepared to assess cold temperatures and frost in cotyledon beets.

There are several nights of cold temperatures predicted over the next five days. Although there is little if anything that we can do in these days leading up to the predicted cold temperatures, the better educated and prepared we are to assess the outcome, the greater will be our peace of mind. Here are some important points to consider to assist with preparation for the upcoming frost events.

- “What temperature is capable of killing my seedling beets?” is the question at the crux of the situation. The answer is unfortunately..., there is no correct answer since it depends on specific situations such as...
  - Weather conditions: Cloud cover moderates atmospheric heat loss and just a little wind can help mix warm air with the cold air to prevent injury.
  - Soil moisture holds heat and slows heat loss versus dryer ground.
  - Residue reflects the warming potential of the sun but also provides air-insulation during the frost event.
  - The actual lowest temperature reached and the duration of cold also influence the impact of a frost.



- However, there are a few rules-of-thumb suggesting that for a single low temperature event, it takes lows of 26° to 27° to kill seedlings unless the duration is for two to three hours or more.
- Cotyledons are designed to handle modest freezing conditions.
  - They possess thickened cuticles and...
  - Maintain high cellular solute levels that act as antifreeze.
- Frost events are both unpredictable and variable. Single frosts will rarely impact a whole field similarly throughout.
- Multiple AND consecutive mornings of frost temperatures deplete soil heat reserves and generally create more damaging situations.
- **Most importantly, what can be done in the hours and days before AND after a frost to be prepared?**
  - To fully assess frost impact, it is vital to set up scouting stations that include emerged beet markers prior to the frost to assess lost or injured beets within a flagged length of row (see attached photo\*).
  - Press some styrofoam cups down into soil over a few beets outside your scouting station for reference.
  - **Post-frost, carefully check growing points for few days for color change and viability (see photo\*). Even if there is leaf damage, growing points can still be intact. Be thorough! Do not make hasty decisions.**
  - Typical May temperatures reach their lowest temps between the 5 and 7 o'clock hours. Do not check your scouting stations before this time or until the temps have sufficiently moved above 32° F.
  - If you have questions, be sure to call your SMBSC Agriculturist for assistance.

Steve Roehl – Ag Strategy Manager.

\* Pictures attributed to Pests, Diseases, and Disorders of Sugar Beet  
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