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STAGING CORN PLANTS

We have had quite the interesting spring of 2022 here in Western Canada. Corn has been planted into all types of conditions. Depending on the area and planting conditions, corn crops could be just popping out of the ground or well on their way to in-crop herbicide applications. Knowing how to properly stage a corn plant is essential for understanding and assessing crop development as well as making in crop applications.

There are four staging methods that can be used to stage a corn plant. It is critical to understand the difference between these methods because there isn't an industry standard method that every company uses to make application recommendations. Keep in mind that the first leaf of a corn plant will always have a rounded tip. This leaf needs to be included in the leaf count, even if it dies off throughout the growing season.

STAGING METHODS

1. Leaf Collar Method (V- Stage Method)

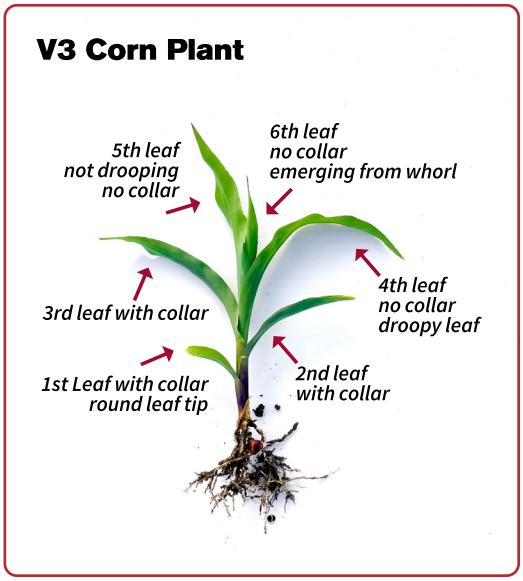
- Count the number of leaves present with a collar from bottom to top of the plant
  - i. A leaf collar is the lightly coloured band located at the base of an exposed leaf blade, close to where the leaf blade contacts the stem of the plant
  - ii. A plant with 4 collar leaves is in the V4 stage of development (Vn; where n = number of leaves with collars)
  - iii. **Watch out:** in warm conditions corn leaves develop quickly and collar development can lag

2. Leaf Over Method ("Droopy" Leaf Method)

- Count all the leaves that have arched over or are "drooping" (leaf tip is pointing down)
  - i. Young leaves emerging from the whorl are not counted
  - ii. **Watch out:** after a hail event it is difficult to distinguish "droopy" vs. "non-droopy" leaves

3. Leaf Tip Method

- Count all the leaf tips from the bottom to the top of the plant
  - i. Young leaves emerging from whorl are counted
  - ii. **Watch out:** some hybrids grow differently (shorter internodes between leaves resulting in more leaves before they are fully functional)



Adapted from OMAFRA Publication 75, Guide to Weed Control.

4. Corn Height Method

- Measure from the soil surface to the highest point of the arch on the uppermost leaf with a tip pointing down
  - i. Rarely used on its own (may be paired with other staging methods)
  - ii. **Watch out:** Not the most accurate method (crop height can vary depending on environment and management conditions)

COMPARING STAGING METHODS

LEAF STAGING METHOD			
Corn Height	**Leaf Over**	**Leaf Tip**	**Leaf Collar (V-stages)**
5-6 cm	2	3	1 (V1)
9-17 cm	4	5-6	3 (V3)
18-33 cm	6	7-8	4-5 (V4-V5)
36-54 cm	8	9-10	5-6 (V5-V6)

WEED CONTROL

Now that we know how to properly stage corn plants, an important thing we need to keep in mind is weed control. Since corn is a very poor competitor, keeping the crop clean during the critical weed free period (CWFP) is essential for maximizing yield. The CWFP in corn is from VE/V1 – V6 (leaf collar method) or 3 to 9 leaves (leaf tip method). Along with sacrifice in yield due to competition, letting weeds get to 4 inches tall can use 50 – 80 pounds of nitrogen, resulting in less nitrogen available for the corn during the season. It is important to understand that the CWFP does not happen at the same date every year, as different conditions can affect when this period happens. It is important to get out and scout to determine the crop stage and weed pressure in each field situation.

Additional Reading:

→ Control Weeds in Early Corn