

Learn early stages of corn development



Breeder's Journal

By DAVE NANDA

LET'S focus on the seedling corn plant. If you know its growth stages, you can plan field operations better.

Most hybrids have 18 to 22 leaves based on relative maturity. How do you measure stages of maturity of a corn crop?

The collar method is most common. Count the number of leaves with collars, which develop when the leaf partially unclasps the stem. A leaf collar is the light-colored band at the leaf's base. It includes the first emerging, round-tipped leaf.

The first sign of corn emergence is the appearance of a tip that breaks through the ground. We call it the coleoptile. It pierces the ground like a spear and starts to elongate. That won't happen until enough heat units have accumulated since planting.

It takes 100 to 120 growing degree days from planting to seedling emergence. The growing point is 1 to 1.5 inches below the surface. Seminal roots supply water and nutrients to the seedling. This is the VF stage.

The growing point stays belowground for three to four weeks. Radical and seminal roots grow, and then secondary roots known as nodal roots get started. These grow from nodes below the ground. The

Key Points

- Corn physiology starts when the coleoptile sprouts a week to 10 days after planting.
- Most agronomists and experts use the leaf collar method to stage corn growth.
- Make sure you know which method pesticide labels refer to before spraying.

first node above the ground is usually the fifth node.

More stages

V1. The first leaf where the leaf blade comes in contact with the stem of the plant is the V1 stage. You will see a thumb-shaped leaf. If the collar isn't visible, don't include it in staging the plant.

V2. At V2, there are two visible collars, generally about seven to 10 days after emergence. Roots of the corn plant start to elongate at this stage.

V3-V5. A plant with four leaves with collars is at the fourth leaf stage, even though there may be six or seven visible leaves. The nodal roots start forming the major part of the root system.

By V5, ear, leaf and shoot start to develop, and tassel is initiated. Plants may be 8 to 9 inches tall, but the growing point is just near ground level.

You can manage corn better if you get to know how it develops and what is happening to its physiology as it grows.



Knowing leaf stages can be important when you're deciding when to look for certain pests, or when you're applying herbicides. Read labels carefully and make sure you know which type of growth staging the label refers to before you go to the field to inspect the crop.

Think like a plant and understand its needs, and you'll have a great crop.

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Monsanto backs ag comm chair at U of I

MONSANTO Co. recently pledged a \$250,000 grant to be put toward an initiative between the University of Illinois College of Agricultural, Consumer and Environmental Sciences and College of Media to help establish an agricultural communications program endowed chair that will strengthen communications for agricultural and rural development.

The James F. Evans Endowed Chair in Agricultural Communications will provide

leadership for the joint program between the College of ACES and the College of Media by serving current and future agricultural communicators through courses, service initiatives, research and relationship building.

"With the population expecting to reach 9 billion by 2030, farmers from Illinois and beyond will be asked to produce more crops while using fewer resources," says Tami Craig Schilling, vice president of tech-

nology communications for Monsanto. "Effectively communicating farmers' efforts to feed, clothe and fuel a rapidly growing population is a major part of the solution."

Monsanto and the U of I have a long history of collaboration on efforts to advance learning and research in agriculture. Most recently, Monsanto funded eight Monsanto Fellows in Plant Breeding representing support of \$500,000.

"We appreciate Monsanto's support in this effort," says College of ACES Dean Robert Hauser. "It would not be possible without the generosity of Monsanto and others who recognize the importance of informing students, the private sector, policymakers and the public in general — here and worldwide — about the role of agriculture in addressing many of society's most pressing issues."

Source: University of Illinois

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