



## Form 5 - Reporting Growth Stages

**Early season staging:**

| Stage     | Description   | Date |
|-----------|---|------|
| Emergence | The coleoptile (or spike) has pushed through the soil surface.  |      |
| V5        | The 5 <sup>th</sup> leaf collar is present. <b>Remember to complete your early season stand assessment at this stage.</b> |      |
| V10       | The 10 <sup>th</sup> leaf collar is present. <b>Remember to collect your first of two tissue samples at this stage.</b>   |      |
| R1        | Fresh silks are present and visible outside the husks.  |      |

**Late season staging:**








| Date                       | Growth stage | Insect/Pest scouting |                    |                     |               |                      |                           |
|----------------------------|--------------|----------------------|--------------------|---------------------|---------------|----------------------|---------------------------|
|                            |              | Tar spot             | Gibberella ear rot | European corn borer | Corn rootworm | Western bean cutworm | Northern corn leaf blight |
| September 1st              |              |                      |                    |                     |               |                      |                           |
| September 15 <sup>th</sup> |              |                      |                    |                     |               |                      |                           |

|                          |  |  |  |  |  |  |  |
|--------------------------|--|--|--|--|--|--|--|
| October 1 <sup>st</sup>  |  |  |  |  |  |  |  |
| October 15 <sup>th</sup> |  |  |  |  |  |  |  |
| November 1 <sup>st</sup> |  |  |  |  |  |  |  |

- Any other pests or diseases present in field? If so, please record what they were and the date they were found.

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**Table 1–12.** Vegetative growth stages in corn

| Stage                      | VE  | V1   | V4   | V6   | V8   | V12  | VT   |
|----------------------------|---|--|--|--|--|--|--|
|                            |    |   |   |   |    |   |   |
| Leaf Collars               | 0   | 1  | 4  | 6  | 8  | 12   | (varies)   |
| Leaf Tips                  | 1   | 3  | 7  | 10   | 11   | 15   | (varies)   |
| Leaf Over                  | 0   | 2  | 6  | 8  | 10   | 14   | (varies)   |
| CHUs Required <sup>1</sup> | 180   | 330  | 630  | 780  | 930  | 1,170  | 1,310  |
| Target Date <sup>2</sup>   | May 16  | May 25   | June 11  | June 18  | June 26  | June 31  | July 18  |
| Notes                      | <ul style="list-style-type: none"> <li>• Emergence.</li> <li>• Days to emerge most often ranges from 6–21 days.</li> <li>• Uniform emergence essential to high yields.</li> <li>• Look for poor germination caused by chafer, wireworms, seedcorn maggot, seedcorn beetle, slugs, black cutworm.</li> </ul> | <ul style="list-style-type: none"> <li>• Start of critical weed-free period.</li> <li>• Growing point below ground.</li> <li>• Ensure herbicide selection is safe for crop stage.</li> </ul> | <ul style="list-style-type: none"> <li>• Ear initiation.</li> <li>• Growing point below ground.</li> <li>• Expansion of nodal root system will soon completely replace seminal root system.</li> <li>• Risk from cutworm and flea beetle damage has passed.</li> </ul> | <ul style="list-style-type: none"> <li>• End of critical weed-free period.</li> <li>• Lower leaves (1–4) dry up, may not be visible.</li> <li>• Growing point at or above ground; more susceptible to frost injury.</li> <li>• Initiated ears and tassel now visible upon plant dissection.</li> </ul> | <ul style="list-style-type: none"> <li>• Side-dressing nitrogen and inter-row cultivation beyond this point pose threat of root pruning.</li> <li>• Beginning rapid stem elongation.</li> <li>• Risk from slug damage has passed.</li> </ul> | <ul style="list-style-type: none"> <li>• Crop becomes increasingly sensitive to yield reduction by heat or drought.</li> <li>• Size of ear and number of potential kernels being established.</li> </ul> | <ul style="list-style-type: none"> <li>• Tassel emerges.</li> <li>• Pollen shed begins 2–3 days prior to silk emergence.</li> <li>• Pollen viability reduced by drought and high temperatures.</li> <li>• Scout for corn leaf aphids, corn rootworm adults and goosenecking caused by rootworm larva.</li> </ul> |

<sup>1</sup> Approximate CHUs required to reach various stages of corn development.

<sup>2</sup> Estimated date to reach various stages of development based on long-term heat unit accumulations for an average 2,800 CHU region and anticipating a May 5 planting date.

**Table 1–13.** Reproductive growth stages in corn

**LEGEND:** NA = no data available, kernels not formed until after pollination.

| <b>R Stage</b>            | <b>R1 – Silking</b>   | <b>R2 – Blister</b>   | <b>R3 – Milk</b>  | <b>R4 – Dough</b>  | <b>R5 – Dent</b>  | <b>R6 – Maturity</b>  |
|---------------------------|---|---|---|--|---|---|
| Description               | Silks emerge from husks at tip of ear.  | Kernels are white, filled with clear fluid and distinct from surrounding cob material.  | Kernels begin to have yellow colour. Inner fluid is milky white.  | Milky inner fluid becomes thicker and pasty. Outer edges of kernels become firmer. Some dents appear.  | Majority of kernels are dented. Hard white layer of starch evident at top of kernel (milk line).  | Hard starch layer evident from top to bottom of kernel. Black layer forms at base of kernel.  |
| CHU Required <sup>1</sup> | 1,480   | 1,825   | 2,000   | 2,165  | 2,475   | 2,800   |
| Target Date <sup>2</sup>  | July 20   | Aug. 3  | Aug. 11   | Aug. 18  | Sept. 1   | Sept. 18  |
| Kernel Moisture           | NA  | 85%   | 80%   | 70%  | 55%   | 30%–35%   |
| Notes                     | <ul style="list-style-type: none"> <li>• Pollination requires 3–7 days.</li> <li>• Silks continue to elongate until fertilized.</li> <li>• Environmental stresses very detrimental to yield.</li> <li>• Begin scouting for ear insect pests (corn earworm, fall armyworm).</li> </ul> | <ul style="list-style-type: none"> <li>• Kernels beginning dry matter accumulation.</li> <li>• Relocation of nutrients from the leaves and stem to the ear begins.</li> <li>• Firing of lower leaves may become evident.</li> </ul> | <ul style="list-style-type: none"> <li>• Rapid grain filling period.</li> <li>• Good plant health, clear skies and active photosynthesis add to kernel size and test weight.</li> </ul> | <ul style="list-style-type: none"> <li>• Top of kernel begins to firm up.</li> <li>• Killing frost may cause yield losses of 25%–40%.</li> <li>• Begin to assess ear rot incidence.</li> </ul> | <ul style="list-style-type: none"> <li>• Milk line advances toward tip as crop matures.</li> <li>• Whole plant moistures suitable for silage harvest.</li> <li>• 90% of grain yield reached by one-half milk line.</li> <li>• Examine fields for lodging, ear drop and stalk rots. If high, consider harvesting early.</li> </ul> | <ul style="list-style-type: none"> <li>• Physiological maturity.</li> <li>• Kernels have achieved maximum dry weight.</li> <li>• Moisture loss from kernels still required for suitable threshing.</li> </ul> |

<sup>1</sup> Approximate CHU required to reach various stages of corn development.

<sup>2</sup> Estimated date to reach various stages of development based on long-term heat unit accumulations for an average 2,800 CHU region, and anticipating a May 5 planting date.