Field Corn Growth Stages

Field corn growth is divided into vegetative and reproductive stages. The vegetative stages are signified by using "V" designations beginning with emergence (VE) and continuing leaf by leaf (V1, V2, etc.) until the plant reaches the reproductive stage (Table 1). Missing leaves can accounted for by examining the main stem for collars or leaf attachment. The reproductive stages are signified by "R" designations beginning with silking and pollen shed (R1) and continuing to maturity.

The life of the corn plant begins when a seed is planted and the germination process is activated. Ideal germination conditions include two important soil requirements: soil moisture adequate to penetrate the seed coat and supply the water necessary for germination; and soil temperature of approximately 50 degrees F. The root shoot (radicle) and the vegetative shoot (epicotyl) emerge within a few days of planting under ideal conditions.

Emergence (VE) occurs when the first leaf appears above the soil surface approximately four days to two weeks after planting. At this stage, the corn plant is growing relatively slowly compared to later vegetative stages. By the time the plant produces 10 to 15 leaves, a new leaf is formed every two to three days. Between stages V15 and V17, the time requirement decreases to one to two days. New leaf formation occurs until the plant reaches approximate full height at tasseling (VT).

The way a corn plant develops helps it tolerate some early stresses when it is in the VE to V6 stages. The growing point of corn remains below the soil surface until the plant reaches the six leaf (V6) stage. Because of this, corn can tolerate severe frost or chemical damage early in the life cycle with relatively little damage until the growing point begins to move above ground with the seventh leaf (V7). However, soil stresses such as flooding or insect feeding can damage or kill the growing point.

Ear initiation and development in corn begin early and continue through much of the vegetative portion of the plant's life cycle. The number of potential ears per plant is determined at the four leaf stage (V4). Tassel formation is initiated at the V5 stage, potential number of kernels per ear and ear size is determined at the V12 stage, and the number of kernels per row is determined at the V15 to V17 stage. Any stress including drought, temperature extremes, or nutrient deficiency during the time of ear development can limit overall production.

Table 1. Corn Reproductive Stages.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Time after Day 0 (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>silking</td>
<td>0</td>
</tr>
<tr>
<td>R2</td>
<td>blister</td>
<td>10 to 14</td>
</tr>
<tr>
<td>R3</td>
<td>milk</td>
<td>18 to 22</td>
</tr>
<tr>
<td>R4</td>
<td>dough</td>
<td>20 to 28</td>
</tr>
<tr>
<td>R5</td>
<td>dent</td>
<td>35 to 42*</td>
</tr>
<tr>
<td>R6</td>
<td>maturity</td>
<td>55 to 65**</td>
</tr>
</tbody>
</table>

*Silage harvest usually occurs between dent and maturity, prior to the formation of a black layer at the base of the kernel.

**Grain harvest occurs after maturity at 15 to 21 percent grain moisture.