

Corn Growth Stages and Critical Periods

Iowa Corn Production Guide

Vegetative Stages

VE - Emergence (4-14 days after planting):

Coleoptile emerges from soil surface. Soil temperature greater than 50F required.

V1-V3 - Early Seedling:

Growing point still below soil surface. Plant can recover from minor frost damage.

V4-V6 - Rapid Growth Initiation:

Growing point moves above soil surface. V6 is critical because KERNEL ROW NUMBER IS DETERMINED during this stage.

V7-V10 - Rapid Vegetative Growth:

Plant height increasing rapidly. Leaf area expanding significantly. Nutrient demand increasing.

V11-V15 - Late Vegetative:

Maximum leaf number reached. V12-V15 is when KERNEL NUMBER PER ROW IS FINALIZED.

VT - Tasseling:

Tassel fully emerged and visible. Pollen shed begins 2-3 days after VT. Plant at maximum height.

Reproductive Stages

R1 - Silking: THE MOST CRITICAL STAGE FOR YIELD DETERMINATION

Silks visible outside husks. Pollination occurring. Maximum water demand period.

R2 - Blister:

Kernels white on outside with clear fluid inside. About 85% moisture. Embryo developing.

R3 - Milk:

Kernels yellow outside with milky white fluid inside. About 80% moisture. Rapid starch accumulation.

R4 - Dough:

Kernels have dough-like consistency. About 70% moisture. Four milk lines visible.

R5 - Dent:

All kernels dented. About 55% moisture. Starch accumulation slowing.

R6 - Physiological Maturity:

Black layer formed at kernel tip. Maximum dry weight achieved. About 30-35% moisture. No further yield accumulation possible.

Critical Periods for Stress Impact

Iowa Growing Season: May 1 through October 31 (approximately 26 weeks)

Week 7-8 (V6-V8): Kernel rows being set - HIGH stress sensitivity

Week 9-10 (V10-V14): Kernels per row set - HIGH stress sensitivity

Week 11-12 (VT-R1): Pollination - CRITICAL stress sensitivity

Week 13-14 (R2-R3): Early grain fill - HIGH stress sensitivity

Week 15-18 (R4-R5): Grain fill - MODERATE to HIGH sensitivity

Growing Degree Day Requirements (base 50F):

VE Emergence: 100-120 GDD

V6 Sixth Leaf: 450-500 GDD

VT Tasseling: 1100-1200 GDD

R1 Silking: 1200-1350 GDD

R6 Maturity: 2400-2800 GDD