

Corn Stress Emergence

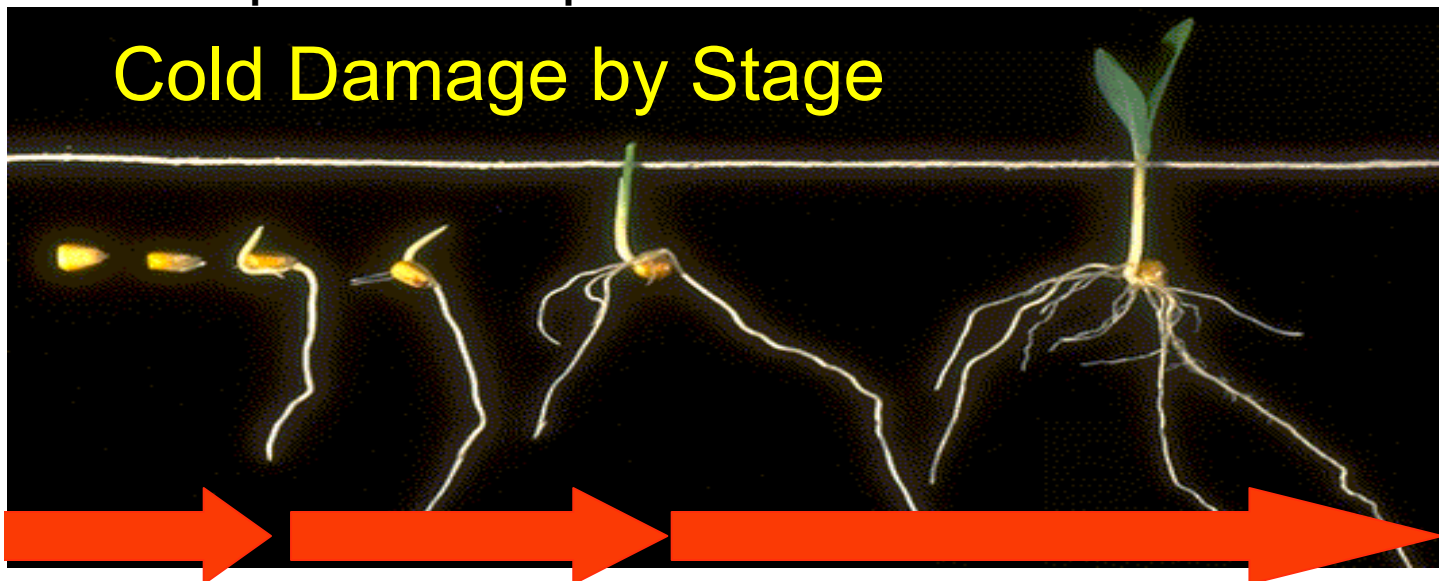


Recommendations to Avoid Cold Injury

Good Stands and Uniform Emergence are Key for Top Yields

- Early Stress Impacts: Stand – Uniformity – Disease
- Corn is most susceptible to chilling damage early during germination when water is being imbibed by seed.
- The first hours or days after planting are most critical (see photo below)
- If cold rain or snow is forecast, stop planting several days before
- Avoid temptation to rush-plant extra acres before a cold storm

Cold Damage by Stage



Severe

Moderate

Low

Classic cold injury



Cold, temperature swings



Herbicide injury



Corn Stress Emergence



Symptoms

Symptom	Likely Cause	Result
Stubby coleoptiles Leaves emerging prematurely	Imbibitional chilling or cold damage	Death, unless unprotected leaf reaches the surface
Brown tissue behind root tip Adventitious roots	Chilling damage Flooding	Chance for survival unless shoot meristem is damaged
Leafing underground Leaves growing along soil crust	Mechanical damage Soil crusting	Usually death, as seedlings lose ability to penetrate soil
Corkscrew mesocotyl or coleoptile	Temperature fluctuations Herbicide injury	Seedling death
Fused coleoptile or bursting on side	Cold damage Genetic tendency	Seedling death
Rotted seed or mesocotyl Spotty wilting	Seedling disease	Seedling death or stunting
Bleached leaves	Herbicide or cold injury	Seedlings can grow out of it unless impairment of photosynthesis is extensive
Pruned roots	Insect damage	Weak seedlings, wilting

Frost before emergence



Frost after emergence



**Compaction, deep planting or poor soil-to-seed contact (greening)
These are not cold stress symptoms**

- Purpling - cool temps + sunny days - accumulate anthocyanin -- usually gone by V4 – V6
- Purpling has no adverse effects on plant health
- Genetic tendency differs among hybrids

