Agronomic Directions
A Newsletter of Cornelius Seed® Read it. Profit.

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We like to see uniform plant emergence and growth. It's important to take the time to adjust planter speed and seed depth, and always plant into good seedbed conditions. Set yourself up for a bumper crop right out of the bag. Variable plant emergence and growth reduces corn yield if development stages vary by two or more leaves.

Corn Percent Planted - Week Ending May 3, 2015				
	Prev. Year	Prev. Week	May 3, 2015	5-Yr. Avg.
Illinois	41	31	**69**	29
Iowa	22	14	**68**	39
Minnesota	7	38	**83**	34
Missouri	61	20	**61**	55
Nebraska	41	16	**57**	38
South Dakota	23	16	**51**	23
Wisconsin	2	5	**42**	18

USDA weekly crop progress reports can be tracked on AgWeb.com for both corn and soybeans.

Imbibitional Chilling

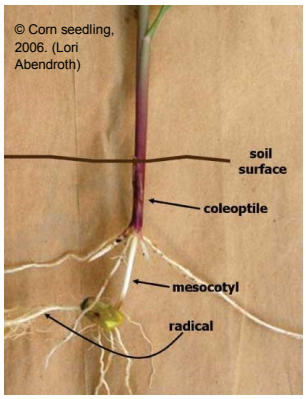
Adapted from Roger Elmore, Dept. of Agronomy ISU, ICM News;
http://www.extension.iastate.edu/CropNews/2012/0511elmore.htm

We've experienced some cold, rainy days this spring that brought our 4-inch soil temperatures down to below 40°F in recent weeks. Corn is a warm season crop and we all know that cooler soil temperatures slow the germination process. It can also lead to seedling growth problems as the effect of imbibitional chilling.

The corn seed is at greatest risk to imbibitional chilling in the first 24-72 hours after planting. Corn seeds may experience this when they absorb (imbibe) water while lying in cold soils. What temperature this occurs at and over what duration of time is still a debate. The seed cell membranes become less elastic when cold and may rupture during this swelling process. If this occurs, seedlings may not emerge or develop properly. The symptom is swollen seed with little to no evidence of germination progress.

Corn Seedling Emergence Issues

Adapted from R.L. Nielsen, Agronomy Dept. Purdue;
http://www.agry.purdue.edu/ext/corn/news/timeless/Corkscrews.html



Another early season cold stress is deformed mesocotyl elongation known as "corkscrew" or leafing out underground, resulting in emergence issues. Normal seedling emergence occurs as a result of elongation of the mesocotyl that elevates the coleoptile or "spike" toward the soil surface.

Wide swings in daily soil temperatures and/or cold soils contribute to the corkscrewed mesocotyl development. The developing seedling will grow towards the heat of the warming soil surface but if that fluctuates enough, it will hinder normal development and cause the seedling to corkscrew or leaf out underground.

Restricted emergence is another cause of this problem. If the coleoptile encounters resistance as the mesocotyl elongates, from crusted soils or compaction, it will restrict coleoptile emergence and force the mesocotyl to elongate in unusual directions below the soil surface.