

CROP NOTES for April 25, 2019 – Imbibitional Chilling?

Iowa State University Extension Information for Northeast Iowa

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Cold Weekend Coming

What about imbibitional chilling?

For much of northeast Iowa, Saturday night is forecast for low air temperatures in the upper 20s. This could drop 4-inch soil temperatures into the low 40s. So should we be planting corn Thursday-Friday-Saturday, or find something else to do? Will the weekend weather get cold enough to threaten imbibitional chilling in corn?

Cool soil temperatures coming this weekend raise concerns with two aspects of corn germination and emergence. Dr. Neilson from Purdue University provides excellent information about these issues at <https://www.agry.purdue.edu/ext/corn/news/articles.14/EarlyCold.html>, but in a nutshell here's what we are looking at.

1. Imbibitional chilling: The initial 24 to 36 hours after corn is planted is the most crucial to be affected by soil temperatures dropping into the low 40°F's and may experience "imbibitional chilling" (absorbing cold water), which may disrupt normal germination. Factors of how cold for how long relative to hybrid tolerance all play a role.
2. Cork-screw Mesocotyl: Corn planted several days prior to exposure to soil temperatures in the 40°F's may experience "cork-screwing" of the mesocotyl during the seedlings attempt to emerge. Again, how cold for how long relative to hybrid tolerance all play a role.

Be sure to scout corn upon initial emergence.

BTW, germinating soybeans are not threatened by imbibitional chilling.

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