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Look at Soybean Planting Populations, Inoculant Use to Reduce Costs

Jennifer M. Rees
University of Nebraska - Lincoln, jrees2@unl.edu

Sandi Alswager Karstens
University of Nebraska-Lincoln, salswager2@unl.edu

University of Nebraska Lincoln
IANR News Service
News and Publishing
Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln
P.O. Box 830918, Lincoln, NE 68583-0918 • Phone: (402) 472-3030 • Fax: (402) 472-3093
News web: ianrnews.unl.edu • E-mail: ianrnews@unlnotes.unl.edu

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LINCOLN, Neb. & Based on three years of University of Nebraska-Lincoln on-farm research, specialists found that reducing soybean planting populations can save growers money.

UNL specialists recommend reducing planting populations from an average of 160,000 seeds per acre to 120,000 seeds per acre in 30-inch rows. This reduction of 40,000 seeds per acre results in savings of $10.66 to $18.57 per acre based on seed costs of $40 to $65 a bag, said Jennifer Rees, UNL Extension educator in Clay County.

This and other cost saving tips to help deal with high input costs in crop production can be found at UNL's Surviving High Input Costs in Crop Production (**http://cropwatch.unl.edu/survivinghighinputcosts.htm**) Web page.

"For three years, producers were able to achieve a 90 percent stand and have not seen a statistical yield variance from 150,000 or even 180,000 seeds per acre," Rees said. This on-farm research was a part of the Greater Quad County On-Farm Research group.

"With increasing input costs, many producers are evaluating every decision they make," Rees said. "These producers wondered if they could reduce soybean populations while maintaining yield and saving money."

On-farm research conducted in field scale, randomized and replicated plots in farmer fields and at the South Central Agricultural Laboratory near Clay Center from 2006-2008 proved they could, Rees said.

"With soybean seed costs increasing, reducing soybean planting populations is another way producers can survive high input costs of crop production," she said.

UNL on-farm research also found that added inoculants often prove to be unnecessary.

UNL research conducted from 2001-2004 at the South Central Agricultural Laboratory near Clay Center and by the Greater Quad County On-farm Research and Nebraska Soybean Feed Grains Profitability Project all showed that adding soybean inoculant did not significantly increase yields on fields with a history of soybeans.

Inoculating soybeans with products containing the bacterium *Bradyrhizobia japonicum* is a common practice and considered an inexpensive insurance against soybean yield loss. The bacterium forms a symbiotic or beneficial relationship with soybean roots in which nitrogen-producing nodules are formed, allowing for nitrogen fixation to occur.

"As producers strive to find a silver bullet to significantly enhance soybean yields, they may look to one of the soybean inoculant or combined inoculant and growth promoter products new to the market," Rees said.

Not adding an inoculant results in an estimated $1.50 of added profit per acre.

However, if the field has not produced soybeans in the past four or five years or has never produced soybeans, an inoculant is needed for nitrogen fixation to occur.

To determine if your field needs re-inoculation, consult UNL Extension NebGuide G1622, Applying the Facts to Your Fields" (**http://www.ianrpubs.unl.edu/sendIt/g1622.pdf**), available at a local UNL Extension office or on the Web.

For more on-farm research information or to get involved with on-farm research, visit the UNL Farm Research (**http://farmresearch.unl.edu**) Web site.

More information about soybean planting populations and inoculants can be found on UNL's Surviving High Input Costs (**http://cropwatch.unl.edu/survivinghighinputcosts.htm**) Web site or at CropWatch (**http://cropwatch.unl.edu**), UNL Extension's crop production newsletter.

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Contacts:
Jennifer Rees
UNL Extension -- Clay County
Extension Educator
(402) 762-3600

Sandi Alswager Karstens
IANR News and Photography
(402) 472-3030

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