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Soybean Inoculation

Soybeans are extremely adaptable. They wouldn't be grown here if they weren't. One of the soybean's adaptation features is its ability to fix its own nitrogen from the atmosphere via nodules on the plant's roots. It's an important necessity when a 60 bushel per acre soybean crop requires close to 300 pounds of N per acre.

For soils that have had recent soybean crops, it's likely that soils have enough bacteria for nodulation, and N production to occur. It's likely why yield responses to inoculation are quite variable in Kansas and other states where soybeans are commonly grown.

It never hurts to take a second look at inoculation, however. The cost inoculation is low and potential yield loss from poor inoculation can be significant unless available soil N levels are high according to some work by KSU Cropping Systems Agronomist Dr. Ignacio Ciampitti. His work shows that nodulation might be particularly important if you meet one of the following:

Where soybeans haven't been grown in the past four years, the bacteria may not compete well with other soil microbes, with numbers gradually declining until replenished.

When soil pH's are at extreme levels: less than 5.5 or greater than 8.75. At pH levels in the six or seven range, nodulation should be optimal.

When soil erosion has been an issue, topsoil may lack bacteria and need enhanced.

When soil organic matter levels drop below one percent, inoculation can be helpful.

When severe drought/flooding occurs, bacteria populations decline. Short term flooding is okay, but some of the flooding time frames last year could adversely affect Bradyrhizobium japonicum populations in the soil. Fields under water more than a week may need attention.

When high heat occurs during the early growth period, plant-bacteria establishment is reduced and inoculation should be considered.

Weren't planning to inoculate this year? Make sure you are checking the boxes above. If not, inoculation might be a pretty good insurance policy.

Help for Vegetable Gardeners

If 2020 encourage you to start vegetable gardening – it's about time to get started. Gardening is a great opportunity to get a little activity in the sunshine while producing food.

If gardening is something new to you, it may be overwhelming. How much seed do I purchase? How much area do I need? Fortunately, our K-State Research and Extension Vegetable Garden Planting Guide is here to help. It provides information on the size of planting needed per person and the average crop expected per 10 feet of crop as well as a calendar highlighting suggested planting dates and expected harvest dates. It includes crop specific information to help you determine what might work best for you.

Our Meadowlark Extension District Office are currently closed to the public, but the planting guide is easily accessed online at <http://www.ksre.ksu.edu/bookstore/pubs/mf315.pdf> .

Want to dig a little deeper? Consider the 77 page Kansas Garden Guide. It takes the Vegetable Garden Planting Guide – and expands it even further. It is available for download or order online at <http://www.ksre.ksu.edu/bookstore/Item.aspx?catId=534&pubId=8219> .

Now is a great time to get outside and do a little gardening while social distancin