K-STATE Research and Extension | Meadowlark District

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Soybean Response to Nitrogen

With any luck, you can see the light at the end of the harvest tunnel. It may also mean some analysis about why one field or portion of a field performed better/worse than another.

Because we know soybeans are large N users (most research suggests three to four pounds of N per bushel of yield), it's fair to question whether plants really *did* get everything they needed from root fixed N plus soil available nitrogen. Research in Kansas seldom shows a response to N for soybeans unless something drastic –failure to inoculate, etc…- occurs. We are better off focusing on other management techniques to increase yields. What about other states?

An analysis of soybean N response studies across the country's major soybean growing regions from 1996-2016 showed much the same. The analysis looked at 105 different locations across 16 states (Kansas included…), with results analyzed to determine whether nitrogen applications in soybeans might indeed be needed. Their findings: not likely.

Among all the experiments, less than one percent of the total yield response was due to a nitrogen related variable (rate/timing/etc…). In other words, there are other factors (weather, soils, other major management decisions…) affecting soybean yield before nitrogen.

Some treatments *did* show a response. The six percent that showed a significant response to N treatment were typically associated with irrigation or very high populations. This suggests that most N responses were tied to other management decisions that also affected yield.

The conclusion: soybean response to nitrogen is measurable but very small, and application typically will not result in positive economic return. That doesn't mean very high management/high yielding soybeans will *never* respond to nitrogen, but that year in year out response chances aren't high for most of our area. Attention should instead remain on major management factors like P/K, weed control, and insect/disease management.

For study results, request a copy via e-mail to dhallaue@ksu.edu or through any District Office, or check it out online at https://coolbean.info/library/documents/Nstudy.pdf.

Lawn Weed Control Time

The dandelions aren't nearly as visible now as they were in May – but that doesn't mean they aren't out there. Look a little more closely. They typically produce a flush of new plants in September that are just getting started at causing you issues for next season.

Fortunately, fall gives us a great opportunity to get on top of these weeds now, as well as other winter annuals, while the weeds are small, rather than waiting until next spring when the weeds have all the advantages. Winter annuals are actively moving resources from the top of the plant to the roots, meaning herbicides will translocate well, killing plants from the roots up.

A number of products are available, many including active ingredients like 2,4-D, MCPP, and dicamba. Make sure the weed is actively growing, and temperatures are in the 50's for best results. Control will be slowed by cooler temperatures, but there are options for cooler time frame applications as well. With any product, always read and follow label directions.