

Shared Learning Call

Corn and Soybean Seed Selection for Extended Rotations

January 4, 2019

Jake Hansen – Albert Lea Seed

Biggest factor with corn is insects and more specific is root worms. Northern and western corn root worm are the two biggest players in that category. You can really disrupt those corn rootworms with an extended rotation plan.

Goss's wilt and fusarium are also of concern with cross over

- Transfer from corn to small grain, particularly wheat. Wheat is much more susceptible to fusarium than corn is. So plant corn after small grain
- Goss's wilt can survive on corn residue and by breaking up over two years you're disrupting that disease cycle – allows the residue to break down even further to relieve that Goss's wilt pressure.

Real quick on weeds, breaking up those cycles for waterhemp, ragweed and palmer amaranth get good control with the

1. Large potential impact on weed management. If you give up your roundup traits or liberty traits, then what do you do with that weed control, what do you do with your herbicide program.
2. Heard that customers do a pre-herbicide program. With roundup and liberty weed size of <6" is key

Traits with corn:

- Smart stacks, etc. through North Star Genetics
- Pretty narrow for lepidopterous insects and most of those fly in. Changing the rotation won't change susceptibility about these kinds of pests.
- Corn rootworm, shouldn't be using it with a two-year rotation anyway – it's most useful for a continuous corn cycle. But some growers may still be using traited corn against rootworm in the two-year rotation – would you feel more confident leaving that trait off in a three year rotation? Northern corn rootworm has an extended diapause so it can stay dormant for a year and hatch in the second year back when it's corn in a two-year rotation. So a small grain reduces this risk.
- Earworm, cutworm, doesn't change with rotation.
- Traits come with added cost and added price. With farm economics the way they are it's always helpful to cut costs somewhere. Albert Lea Seed Viking is Non-GMO and Organic
- If you do away with the traits you may have to go back to a scouting system.
- Wade – running non-traited corn, scouting. Haven't had rootworm issues in the past so that gives him a little more confidence.
- Didn't see a lot of damage from corn-borer 5-10 years ago but now there's more pockets of damage showing up in SD and MN – what's been going on in Iowa?
- Wade – have seen some signs of corn borers, but it's nowhere near threshold. They exist but that's basically it.

- A lot more double bore or conventional, singly hybrids going out the door this year. Speaks to more rotations at least corn-bean or even extended rotation

Brent – seen significant corn borer pressure that has required spraying. Scouting every 3-4 days in the peak time. Spraying for above ground worms where I saw egg masses on the leaves and worms in every single plant. Sprayed with a high clearance sprayer. Rotated acres corn-bean, ears started to fall off early and a lot of the shanks were hollow. How to scout for that better next year? Hard to find the egg masses. Was field by field, out of six fields only 1-2 had corn borer.

Seems like corn borer is moving east from the Dakotas and Nebraska.

Iowa state monitors for armyworm flights and corn borer flights so you can predict when they're coming and you need to scout.

Introducing cover crops like clover can take some costs off nitrogen too.

Q & A:

Q: Last year we chose a corn hybrid super early for our region, had major issues at dry down because we got all that heat in August and the grain was falling apart by end of September. 98 day hybrid in a 110-112 day territory. The reason was that that variety doesn't move south very well. How far can we move hybrids or how early can we go with harvest?

- Planting mid may and harvest last week of September. Weren't out there none too late. Were you seeing any kind of discoloration early on? Black marks on the stalks? I didn't see any signs of stalk rots. I have noticed that there are hybrids that need to stay in their zone of adaptation. Stalks stay shorter, the ear height is lower and it ends up having lots of issues. Cannibalizes itself and tries to finish out early. Things start falling apart. There are hybrids that you can plant that are good at moving south, got to talk to the seed dealer and get that figured out.

Q: Any pitfalls to look out for with shorter season soybeans like the corn?

- Shorter season beans so we can plant winter small grains? We see as early as about a 1.2 down across the highway 18 corridor in Iowa. Compete with any 2.0 – 2.3 beans pretty easily. Beans tend to move south a little better than corn does.

Q: What herbicides can you use for non-gmo soybeans

- Soybean herbicide program for non-gmo no-till beans. Zidua pro or clefady and like that. What do you guys like on non-gmo no-till beans? Prowl? Flexstar, cobra, select as post. Sonic or authority as a pre.

Plant green, burn down with roundup and then flexstar as a post.

Using authority as a pre and mostly didn't need to do a post. Lamsquarter and ragweed are biggest problems in his area of Southern MN.

Q: Doing a cheap alfalfa for just the one year after small grain?

- Good impact on disrupting below ground insect pressure
- Corn and soybean yields will go up
- Four year rotation will combat problem weeds, mostly with broadleaf weed control particularly giant ragweed.

Q: How much nitrogen can I expect to get out one year of alfalfa?

- Long term stand was 140 lbs+ you'd be slightly less than that but not much. Matt Liebman research did one year alfalfa and it provided all of the nitrogen need.

Q: Worried about doing small grains and alfalfa on bottom fields.

- Are some new breeding options for alfalfa with more tolerance for wet soil conditions. But that's more costly so you wouldn't want to do it for only a year.
- Rye is most tolerant, oats are second. Oats broke up the antiomyscise (sp?) issue in the wet soil in some Minnesota trials.

Q: Can you grow small grains profitability?

- Do some research. Is there a market on the small grain that you're producing? What is the local market buying? If you're looking at a food grade material, understanding that market place as well. Are there alternative markets? Use for legume or forage crops that follow it.
- There are budget templates on ag decision maker at ISU and you can put in there fertility and 45-50 lbs of K per ton of straw taken off.

Q: Any consideration given to cropland grazing exchange? Any chance that that could match up folks who have cover crop seed?

- PFI is working on it. An App connecting all kinds of cover crop services and grazing is in the works.

Q: Trying to do a corn-oat rotation. Underseed oats with 8 lbs of clover and then no-till back into corn. What are the potential problems or benefits with this system?

- Fusarium is not as big of an issue, MN doesn't even rate for FHB in their oat trials. Wheat and barley are the most common to get FHB.
- Very little fusarium at all. Oats have two sets of hulls. The outer glumes, FHB is on the rotilla area next to the glumes so it doesn't get down to the oat groat. Seen it in areas like southern Ontario because they have high FHB pressure with white wheat. So in Manitoba and ND it's more of a problem.
- Oats just don't yield as well following corn as after a legume. Oats do better after corn if the residue is removed so it might be a good field to bale or graze.

Q: What is the yield drag on oats following corn versus a soybean?

- No replicated trials. From personal experience 15-20 bushels. The oats get up sooner and tiller the less residue there is.

- It's so much dependent about timing, when did you get the oats planted, etc. that it's all over the board. Under most conventional tillage, the ground is a little bit warmer under soybean stubble versus corn stubble which can help the oat get an earlier start and there's earlier nitrogen release. Most research in the U.S. doesn't study the impact on small grain yield. Maybe check out North Dakota or Canada.

Q: In southern Wisconsin I have a big problem with snake weed, an archaic plant that's no leaves, just spikes. Deep rooted. Also called scouring rush. Equisetum. I have found no way to get rid of it. Anybody familiar with it?

- Has a two-phase life cycle. Spikes is first and then they look like little pine trees is the second part of the life cycle. Brent – have to till it up every 4-5 years being careful not to pull the rhizomes out further into the field. Has done 2-4D in that early horsetail stage. Just a backpack sprayer along the edges. "Biology and control of field horsetail" from UW Extension

Q: I'm considering planting corn at the same time as cereal rye. Anybody have experience with something like this?

- Issue with companion planting is when is it a companion and when is it a weed. If you're planting into cold soils the rye will beat the corn out of the ground. If you can get them out of the ground at the same time then the rye will die after canopy closes. Unless you have a lower population in which case the weeds will come up along with the rye.

Q: Should I try interseeding instead?

- Difficult to get a cover crop on because of the wet weather after corn. Knock corn yields if it's seeded before V5. Rust moves in in July so the rye doesn't overwinter when planted in the spring.