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The Whole Truth

I have a 35 acre field of conventional corn and the fertilizer program and the some of the products came from BRT Ag and Turf in Rochester, Minn.

Since the field is corn after corn with a history of heavy rootworm pressure I worried about control and the potential for big time damage. To control rootworm, a neem oil product was mixed with the starter fertilizer and then the plant got another early foliar dose at around V4 to V5. Neem oil has insecticidal properties and they are published scientific papers illiustrating that it can control corn rootworm.

So when the custom applicator was making a recent foliar spray, he told me that the corn was root lodged and in some places very severe. My immediate reaction was the neem oil didn't work and couldn't control rootworm at high pressure levels. Historically I have been planting Bt corn (triple stack) and applying 2/3 rate of counter to control the rootworms and this approach was working but I was still counting high beetle numbers.

So I invited out several agromists to take a look at the problem and help me determine what was the cause. And the cause wasn't what I thought it was! Joining me in the field were Jeff Littrell with BRT, farmer Bill Darrington from Persia, Iowa, and Steve Knauss who is formulating and selling the neem oil product.

We did a lot of walking in corn that was beginning to tassel and we immediately noticed alot of variability in plant stage and height. And we also saw signs of root lodging. We begin digging up big and small plots and digging holes in the soil profile.

We learned three things. First the cause of the root lodging and smaller and later plants was sidewall compaction and mohawk roots confirmed this. Second the soil was compacted 3 to 4 inches deep and again below 8 inches deep. Third - the profile was a wet, inert mass of minerals and organic matter that didn't carry a normal healthy earthy odor. And fourth there were signs of rootworm feeding but nothing more than you might see on Bt corn and on fields without Bt corn and low rootworm pressure.

I remembered back to planting when BRT brought over their planter. The soil was very fit on the surface 2 inches after running the Great Plains TurboTill. Below at 3 and 4 inches deep and deeper the soil was wet and mucky and really not fit for planting and I knew it. But it was late May and the top soil was perfect and we needed to plant it so we set the planter the best we could and hoped for the best and it turned out worse than I thought. I remember the old adage never mud in seed and we sort of did that and yield got hurt.

The soil isn't biologically active. Darrington said I need to do two thing including ripping out the compaction layer and adding gypsum for several years. BRT recommends I continue to add a residue digester (concoction of nitrogen, sulfur, sugar and microorganisms) which I did do last spring.

But in the end the two doses of neem oil worked to control rootworm pressure and it appears as good as the Bt trait plus a dose of Counter. I will need to track corn rootworm beetle counts over the next couple weeks to see what kind of pressure still exists. But so far the neem oil seems to be working and I am sure the manufacturer is happy about this,

I learned alot of agronomy during this field visit.

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