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Seed Treatments: Resistance – or Just a Bad Year?

There have been two main soybean diseases of note this year: Phytophthora root rot was commonplace through our KSU Plant Disease Diagnostic Lab in mid-summer while Sudden Death Syndrome (SDS) has really started to show up now. If you had a seed treatment applied for either of those diseases – and still had issues – you might be asking why.

While product resistance is often raised as an obvious culprit, other factors contribute to disease presence as well. Environment is the big one. We know that a seed planted into some conditions will struggle more than one planted in 'better' conditions. For Phytophthora, for example, warm, saturated soil, especially shortly after planting, is conducive to root infections that eventually result in destruction of roots and stems. Sudden Death also likes wet soils, but maybe slightly cooler temperatures. How long suitable conditions last can be a factor as well.

Variety tolerance is another factor. Finding the perfect soybean variety with the perfect disease package is impossible but finding one that checks as many boxes as you can, particularly on troublesome acres, can be an important management tool. Complete resistance isn't possible, but at least *some* level of resistance could make significant yield differences.

While resistance *is* possible, disease control failure is more likely due to seed treatment misapplication or choosing a less than effective seed treatment than it is resistance. Examples of pathogen resistance to seed treatment fungicides has thus far been rare and localized. A 2024 published study found that two of our common SDS treatments (fluopyram – ILEVO and pydiflumetofen – SALTRO) are still showing similar effectiveness against SDS as they were in similar studies over a decade ago. In other words, be vigilant when it comes to monitoring for resistance to seed treatments (and if you think you might have it we can sure discuss further...), but other factors are likely at play as well.

The next few months are going to give us a great opportunity to evaluate the efficacy of our planting time seed treatment decisions. While the crop is still green, it's a great time to get a visual appraiser and as we move to harvest, yield will tell the tale. Using those observations plus varietal information, planting dates, growing conditions, and seed treatments can help us take even bigger steps towards better management next year. No single strategy will completely manage a particular seedling disease and gathering all the information we can now is a huge step towards developing an effective and integrated approach to seedling disease management.