

DEVELOPMENT OF SEED-APPLIED AND IN FURROW TREATMENTS TO INSURE THE ESTABLISHMENT OF PEANUT STANDS IN GEORGIA

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TSWV is increasing in severity each year in Georgia and is once again becoming a major threat to production. One of the foundations of TSWV management is obtaining a uniformly emerging plant stand of at least 4 plants per foot. Of course strong, healthy plant stands are important for establishing the yield potential of the crop apart from TSWV considerations. Our industry generally produces good quality seed which is the foundation for those stands. However, many factors can act to impact the quality and performance of seed. One of the most important factors is seed and seedling diseases, which can be caused by a wide range of organisms. Seed treatments are often overlooked, but in reality are one of the most important components of an integrated production systems. We were reminded of this in 2020 when peanut seed in Georgia was heavily contaminated with *Aspergillus flavus* as a result of the hot, dry conditions in 2019. These isolates were also found to be resistant to azoxystrobin, one of the primary ingredients in Dynasty, our main seed treatment. The industry was able to shift to Rancona, which was already under development. The sudden development of resistance to current seed treatment fungicides is always a risk, and efforts must be made to monitor further shifts and develop robust treatments.

Progress Report

Multiple seed treatment and in furrow fungicide trials were established this past spring to determine which were most effective at controlling seedling diseases and increasing yields. These trials are often conducted using lower germ seed that is more likely to show any weaknesses in the treatments. Although most commercial seed was fairly high germination last year, we used seed with germ in the 70's for many of our trials. The primary pathogen isolated from this seed was *Rhizopus*, although there was some *Aspergillus* and other pathogens as well. The biggest difference this year from previous seasons was the cold, wet weather we experienced at planting time. Some fields stood in water for days or weeks following heavy rain. Such conditions were terrible for seed germination and growth, and even good seed often struggled to get established. This made for an absolute acid test where there was zero emergence in nontreated plots of weaker seed. Even good seed was challenged and produced stands of only 1.3 plants per foot without a good seed treatment. These plots yielded 1400-1900 lb/A less than those with treated seed. The new liquid treatments Trebuset and Rancona VPL had similar yields. The Rancona WPD had slightly better stands in some cases, but the yields were similar to the liquid treatments. As mentioned, there was a lot less *Aspergillus* this year as it is generally favored by hot, dry conditions. One of our best in furrow treatments for *Aspergillus* has been Velum, but with the conditions in 2023 it had very little impact on plant stands or development. The phosphite fungicide Kphite increased stands, likely due to reductions in *Pythium*, but current MRL restrictions on peanut exports to the European Union currently restrict use of that chemistry. The high frequency of *Rhizopus* in seed, and the apparent rapid degradation of seed when it is present, make it apparent that more intensive study is needed of this pathogen. We currently know very little about which species are most common, which are most pathogenic, and whether or not they respond similarly to fungicides. That work is currently in progress.