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 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 system. 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. We discovered that the high rates of infection were also due to the development of populations of *A. flavus* that were essentially immune to azoxystrobin, one of the primary ingredients in Dynasty, our main seed treatment. With the increasing use of the same classes of fungicides on peanuts and even rotational crops, the potential for resistance to occur in multiple seed and seedling pathogens is rapidly increasing. The sudden development of resistance to fungicides used on peanut seed in any one of multiple pathogens could have devastating implications. To address this concern, preliminary in vitro research was conducted to determine the effectiveness of fungicides in inhibiting *Rhizopus*.

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Our results showed that three species were associated with the seed lots in our study: *Rhizopus delemar*, *R. oryzae*, and *R. stolonifer*. *Rhizopus stolonifer* was less tolerant of high temperatures and caused less disease than *R. delemar* and *R. oryzae*, which showed rapid growth within 24-48 hours and overall high levels of seed infection.

The in vitro fungicide sensitivity of fifteen *Rhizopus* isolates showed that fludioxonil, carboxin, and pydiflumetofen provided consistently high efficacy against *Rhizopus* spp., making these fungicides excellent candidates for incorporation into the management of *Rhizopus* spp. in peanut seeds. Fluopyram showed moderate efficacy, while sedaxane exhibited significantly variable sensitivity among the tested *Rhizopus* spp. isolates. The lack of inhibition by azoxystrobin, mefenoxam, and ipconazole within the tested concentration range emphasizes the need to broaden this range in future assays and carefully monitor resistance development. Future research should also investigate and monitor the potential for genetic resistance within *Rhizopus* isolates to these fungicides.