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Strawberry

Comparing media types for soilless strawberry production. Pa. Veg. Growers. Assoc. 2021-2022. K. Demchak, T. Elkner, and K. Snyder, Penn State Univ.

Objective 2.

Dissemination of results: met with companies producing the media types being tested to discuss results thus far and characteristics needed for strawberry producers; otherwise the project is too new for further dissemination of information

Plans for next reporting period: experiment will be modified and repeated, a talk on results is scheduled for the Mid-Atlantic Fruit and Vegetable Convention, and a twilight meeting or field day will be held at experimental site

Characterizing anthracnose fruit and crown rot fungi in PA strawberry plantings. Pa. Veg. Growers. Assoc. 2020-2022. K. Demchak and S. May, Penn State Univ.; M. Hu, Univ. of Maryland

Objective 2.

Dissemination of results: Results were discussed with a PA strawberry nursery, and a talk was given on early results at the Mid-Atlantic Fruit and Vegetable Convention

Plans for next reporting period: additional isolates have been obtained and are being cultured for ID using molecular techniques

Identifying Weed Hosts of Fruit and Crown Anthracnose in Strawberry Fields. Pa. Veg. Growers. Assoc. 2021-2022. L. Fronk, S. May, K. Demchak, and R. Marini, Penn State Univ.; M. Hu, Univ. of Maryland

Objective 2.

Dissemination of results: Results were discussed with PA strawberry nursery, talk was given on results from a related project at the Mid-Atlantic Fruit and Vegetable Convention and what we planned to do for this project

Plans for next reporting period: isolates have been obtained from several strawberry fields and the weed species in them in PA, and are being cultured for ID and determining relatedness using molecular techniques

2. Research results

1) Comparing media types for soilless strawberry production. Since local growers have been interested in growing strawberries in a soilless system for literally decades, the goal of this work was to find a grower-friendly means for doing so that could be recommended to growers. An experiment with 5 replications in a randomized complete block design was established at Penn State's Southeast Research and Extension Center. The treatments are 7 different media types



already used for strawberry production in other locations, or thought to have potential for strawberry production. A 2:1 horticultural peat:coarse perlite blend previously used successfully was included for comparison. Though this media type worked well, it was one that needed to be mixed by the grower to avoid the addition of lime to the media. The cultivar Albion was used for the experiment. This experiment is still being harvested and data is being entered. The site has a high bicarbonate water source, and it is becoming apparent that how necessary it is that the water be acidified depends on the media type being used. The plan for next year is to reduce the number of media types being tested, and test these in combination with two fertigation treatments.

2) While nursery plants are generally accepted as the primary source of *Colletotrichum* inoculum in strawberry plants on grower farms, the question remains as to what the potential sources of inoculum in strawberry nurseries are. The goal of the second and third projects listed above is to hopefully make some progress towards identifying potential inoculum sources and reservoirs, if any exist other than the strawberry field itself or other infected strawberry plants on the farm.

3) Though not part of a formal research project, a fair amount of time was spent this past year working with a strawberry plug plant nursery in PA that produces about 2 million plug plants and distributes them to growers in PA and nearby states. Runner tips bought in from an NC nursery were once again badly infected with an aggressive strain of *Neopestalotiopsis*, despite the NC nursery's efforts to produce clean runner tips. This resulted in the PA nursery alerting growers, cancelling orders, and discarding well over 100,000 plug plants for the second year in a row. Plans are to use a northern source of runner tips in the future, but the problem remains of there being of an insufficient supply of runner tips available early enough in the season to produce plugs for northern growers using the plasticulture system and preferring plug plants over dormant stock.

3. Publications

Orde, K., R. Marini, K. Demchak, and R. Sideman. 2021. Albion Strawberry Responds to Mulch Treatments and Low Tunnels Covered with Photosensitive Films. 56(9):1005-1014. <https://doi.org/10.21273/HORTSCI15886-21>

Takeda, F., A. Rose, and K. Demchak. 2020. Effects of Cane Emergence Time, Bending, and Defoliation on Flowering and Yield in Primocane-Fruiting Blackberry. *Agronomy*. 10(11)1737. <https://doi.org/10.3390/agronomy10111737>