**Evaluation of Soybean Germplasm Under Pennsylvania Conditions**

Final Report

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In 2019, Penn State soybean evaluation trials were conducted at three locations: Blair, Centre, and Lancaster Counties. The results from these trials are summarized below.

On May 21st, on a private farm in Blair County, we planted 24 entries in the Early Maturity Group (MG 3.0 and earlier) trial and 45 entries in the Late Maturity Group (MG 3.1 and later) trial. On October 13th we harvested the Early MG trial and averaged 67.3 bushels per acre. On October 21st, we harvested the Late MG trial and averaged 76.5 bushels per acre. The 2019 yields in the early and late MG trials in Blair County were up 25% and 29% respectively, when compared to the 2018 yields.

On May 22nd, at the Russell E. Larson Agricultural Research Center in Centre County, we planted 28 varieties in the Early Maturity Group (MG 3.0 and earlier) trial and 48 entries in the Late Maturity Group (MG 3.1 and later) trial. On October 29th, we harvested the early MG trial, which had an average yield of 65.8 bushels per acre. On November 3rd, we harvested the late MG trial and averaged 72.3 bushels per acre. The 2019 yields in our Centre County trials were up considerably compared to the 2018 Centre County trials, with the Early MG trial increasing by 35% and the Late MG trial increasing by 43%.

On June 4th, at the Southeast Agriculture Research and Extension Center, we planted 26 varieties in the Early Maturity Group trial (MG 3.3 and earlier) and 53 varieties in the Late Maturity Group trial (MG 3.4 and later). On July 16th, we planted 27 varieties in our Double-Crop trial at the same location. Both full-season trials were planted into conventionally tilled ground and the double-crop trial was planted into a field that had been planted to an oats cover crop that was terminated and lightly disked prior to planting. On October 10th, the early and late MG trials were harvested and averaged 54.4 and 57.6 bushels per acre respectively. On November 11th, the Double-Crop trial was harvested and averaged 42.1 bushels per acre. The Early and Late MG trial yields were down by 17% and 8% respectively, when compared to 2018 and the Double-Crop trial yielded 23% lower than the 2018 Double-Crop trial.

Field conditions at all 3 locations were wetter than normal during May. The Blair County site was especially affected and was partially flooded in early May, due to a nearby stream overflowing. Fortunately, the drainage system installed in that field was able to provide adequate drainage and we were able to plant approximately 2 weeks after the flood. Planting at the Lancaster County site was delayed, in part due to wet conditions, which most likely played a role in the reduced yields. By mid-June, rainfall and temperatures were near normal at all trial locations and by mid-July, rainfall had been reduced to the point that conditions were drier than ideal, until late September. Except for the wet conditions during May, growing conditions at all 3 sites were much better than what we experienced during 2018.

Overall, we feel that we had a successful season, despite the early-season challenges. Our yields were up considerably at 2 of the 3 locations and we were able to document differences in variety performance, which could be useful information for producers in Pennsylvania.

Results of these trials are posted on the Penn State Extension website at:

<https://extension.psu.edu/2019-soybean-variety-trials>

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