

# Evaluation of Soybean Germplasm Under Pennsylvania Conditions: 2012

Project PSB R20120-011

Final Report

December 18, 2013

In 2012, we expanded the soybean evaluation trials to three locations. In addition to our traditional Lancaster and Centre County trials, this year we added a third location, which is near Martinsburg, in Blair County.

On May 12<sup>th</sup> at the Russell E. Larson Agricultural Research Center in Centre County, we planted 30 entries in the Roundup Ready - Late (MG 3.1 and later) trial and 17 entries in the Roundup Ready - Early (MG 3.0 and earlier) trial. Also in Centre County, on May 25<sup>th</sup> we planted 23 entries in the non-Roundup trial, which included 10 experimental varieties and 4 aphid resistant varieties from Ohio State University, 5 commercial non-RR lines, 2 public varieties, and 2 commercial Roundup Ready check varieties. Growing conditions in Centre County were wet during most of May and early June, followed by hot, dry conditions until the second half of July when we received some timely rainfall. The month of August produced over 5 inches of rain, just in time for pod fill. On October 1<sup>st</sup> we harvested the Early MG trial and averaged 61 bushels per acre. On October 5<sup>th</sup> we harvested the Late MG trial and had an average of 63.3 bushels per acre. The Non-RR trial was harvested on October 24<sup>th</sup> and averaged 60.2 bushels per acre. Yields in all Centre County trials were comparable to the 2011 yields in the same trials.

On May 18<sup>th</sup> at a privately owned farm near Martinsburg, in Blair County, we planted 9 entries in the Roundup Ready - Early (MG 3.0 and earlier) trial and 24 entries in the Roundup Ready - Late (MG 3.1 and later) trial. These trials were no-tilled into a field where the previous crop was corn silage. The farm where these trials were conducted had highly productive soils with a history of dairy manure applications. The growing conditions in this area were similar to that of Centre County. On October 17<sup>th</sup> we harvested both the Early and Late MG trials, which yielded 62.3 and 67.9 bushels per acre respectively.

On May 23<sup>rd</sup> at the Southeast Agricultural Research and Extension Center in Lancaster County, we planted 43 entries in the Full Season Roundup Ready - Late (MG 3.4 and later) trial and 15 entries in the Full Season Roundup Ready - Early (MG 3.3 and earlier) trial. We also planted 22 entries in the non-Roundup Ready trial on the same day in Lancaster. On June 27<sup>th</sup> we planted 19 entries in the Lancaster County, Double Crop trial. Growing conditions in Lancaster were wet during the month of May, which delayed planting of the full season trials. June produced unusually hot temperatures with little rainfall for most of the month. Unfortunately, the exceptionally hot temperatures and dry conditions in late June continued through July and as a result, the stands in our double-crop trial were extremely variable and unacceptable for a performance trial. As a result of the stand variability, we felt any data collected would not be useful and therefore we made the decision to abandon the double-crop trial. The month of August was not as hot as the previous months, but produced less than 2 inches of rain. On October 18<sup>th</sup> we harvested the Early MG trial and averaged 53.4 bushels per acre. On October 22<sup>nd</sup> we harvested the Late MG and the Non-RR trials, which averaged 57.8 and 62.2 bushels per acre respectively. Yields in the non-RR trial (which included 2 RR varieties used for comparison) were up compared to the 2011 non-RR trial. Yields in both the Late MG and Early MG trials were down from 2011, especially the Early MG, which averaged almost 30% lower when compared to 2011.

Results of the program were posted on the Department of Plant Science website at:

<http://extension.psu.edu/plants/crops/grains/soybeans/soybean-variety-tests/2012-reports> These results were used at numerous winter meeting and at our summer field day at Landisville. These trials have provided us an opportunity to leverage our support and conduct more trials for industry at the same locations. For more information, please feel free to contact Mark Antle at (814) 360-7831 or Greg Roth at (814) 863-1018.