2019 Conventional Soybean Variety Trial

Dr. Heather Darby, UVM Extension Agronomist
Sara Ziegler, Ivy Luke, and Rory Malone
UVM Extension Crops and Soils Technicians
(802) 524-6501

Visit us on the web at: http://www.uvm.edu/nwcrops

THE UNIVERSITY OF VERMONT EXTENSION

2019 CONVENTIONAL SOYBEAN VARIETY TRIAL

Dr. Heather Darby, University of Vermont Extension
heather.darby[at]uvm.edu

In 2019, the University of Vermont Extension Northwest Crops and Soils Team evaluated yield and quality of short season soybean varieties at Borderview Research Farm in Alburgh, VT. Soybeans are grown for human consumption, animal feed, and biodiesel. As farmers look to reduce feed costs or diversify markets, soybean acreage across Vermont is increasing. Local research is needed to identify varieties that are best adapted to this region. In an effort to support and expand the local soybean market throughout the northeast, the University of Vermont Extension Northwest Crop and Soils (NWCS) Program, as part of a grant from the Eastern Soybean Board, established a trial in 2019 to evaluate yield and quality of soybean varieties appropriate for the region.

MATERIALS AND METHODS

Several seed companies submitted varieties for evaluation (Table 1). Twenty-five soybean varieties were evaluated from maturity groups 0, 1, and 2.

Yield data and stand characteristics were analyzed using mixed model analysis using the mixed procedure of SAS (SAS Institute, 1999). Replications within trials were treated as random effects, and hybrids were treated as fixed. Hybrid mean comparisons were made using the Least Significant Difference (LSD) procedure when the F-test was considered significant ($p<0.10$).

Variations in yield and quality can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine whether a difference among hybrids is real or whether it might have occurred due to other variations in the field. At the bottom of each table a LSD value is presented for each variable (i.e. yield). Least Significant Differences (LSDs) at the 0.10 level of significance are shown. Where the difference between two hybrids within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure that for 9 out of 10 times, there is a real difference between the two hybrids. In this example, hybrid C is significantly different from hybrid A but not from hybrid B. The difference between C and B is equal to 1.5, which is less than the LSD value of 2.0. This means that these hybrids did not differ in yield. The difference between C and A is equal to 3.0, which is greater than the LSD value of 2.0. This means that the yields of these hybrids were significantly different from one another.

RESULTS

Weather data was recorded with a Davis Instrument Vantage Pro2 weather station, equipped with a WeatherLink data logger at Borderview Research Farm in Alburgh, VT (Table 4). Overall, the season began cooler and wetter than normal but became hot and dry in the middle of the summer. July brought above normal temperatures and little rainfall. The longest period without rainfall in July lasted 12 days. This dry period, which occurred around the time of pod formation, may have negatively impacted soybean plant growth and productivity. 2 0 612 792 reW* nBT/Fg/Fe2 0 612 792 re592 reW*6BTq50.0000-33(d)11(iq50cqd6(s)9(e)(l)