2020 Organic Soybean Variety Trial

D

2020 ORGANIC SOYBEAN VARIETY TRIAL

Dr. Heather Darby, University of Vermont Extension

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). The season began with cooler than normal temperatures, but temperatures quickly increased and remained above normal for much of the season. Rainfall was below normal for much of the season with the region designated as D0 or abnormally dry throughout the season (Drought.gov). Much of the rain that fell throughout the season came in short duration storms. For example, in August there were only 6 rain events that accumulated at least 0.1". Of these, 2 events totaled 1.53" and 2.98", contributing 67% of the month's entire accumulation. Furthermore, temperatures remained above normal for much of the mid-summer. In July, 75% of the month saw temperatures climb above 80° F with some days reaching above 90° F. These temperatures contributed to above normal Growing Degree Day (GDD) accumulations of 2611, 134 above the 30-year normal.

Table 4. Weather data for Alburgh, VT, 2020.

Alburgh, VT	May	June	July	August	September	October
Average temperature (°F)	56.1	66.9	74.8	68.8	59.2	48.3
Departure from normal	-0.44	1.08	4.17	0.01	-1.33	0.19
Precipitation (inches)	2.35	1.86	3.94	6.77	2.75	3.56

varieties. Oil yield ranged from 224 to 474 lbs ac^{-1} which equates to approximately 29.4 to 62.1 gal ac^{-1}.

Hot dry weather also contributed to very little disease or insect pressure observed throughout the season (Table 6). The two varieties without data had significant leaf discoloration or loss at the time the assessment was conducted and therefore these data were not collected. The only disease that was observed and varied across varieties was downy mildew, which was present in all varieties evaluated. The lowest incidence of downy mildew occurred in the variety O.1700, which averaged 1.25 on the 0-5 scale. This was statistically similar to three other varieties. The variety 12A2 had significantly higher downy mildew incidence averaging 3.75 on the 0-5 scale. Very few cases of Frogeye leafspot and Sclerotinia white mold were seen in the entire trial and thus these data are not presented here. All plots had similar leaf defoliation ratings due to damage caused by chewing insects such as Japanese beetles. These incidences of pest damage and disease did not appear to significantly impact soybean performance.

Table 6. Insect and disease pressure of soybean varieties – Alburgh, VT, 2020.

Company	Variety	Relative maturity	Downy mildew	Brown spot

ACKNOWLEDGEMENTS

We would also like to acknowledge Roger Rainville and the staff at Borderview Research Farm for their generous help with this research trial as well as Henry Blair, John Bruce, Catherine Davidson, Hillary Emick, Scott Lewins, and Lindsey Ruhl for their assistance with data collection and entry. We would also like to thank the seed companies for their seed and cooperation in this study. The information is presented with the understanding that no product discrimination is intended and no endorsement of any product mentioned or criticism of unnamed products is implied.

UVM Extension helps individuals and communities put research-based knowledge to work.