

2011 ORGANIC SOYBEAN VARIETY TRIAL

In 2011, the University of Vermont Extension conducted a soybean variety trial in Alburgh, VT. The purpose of this trial was to provide yield comparisons of food- and feed-grade soybeans in Vermont's climate. Varietal selection is one of the most important aspects of crop production and significantly influences yield potential. It is important to remember, however, that the data presented are from replicated research trials from only one location in Vermont and represent only one season. Crop performance data from additional tests in different locations and over several years should be compared before making final varietal selections.

MATERIALS AND METHODS

In 2011, an organic soybean variety performance trial was conducted at Borderview Farm in Alburgh, VT. Several seed companies submitted varieties for evaluation (Table 1). The soybean varieties were considered early maturing, with maturity groupings between 0.6 and 1.8. Soybeans with maturities above early group 2 cannot typically be grown in Vermont. Both dark hilum and light or clear hilum varieties were included in the study (Figure 1). Light hilum varieties are typically grown for culinary uses, since the dark hilum

The trial was planted at Borderview Farm in Alburgh, VT on a rocky silt loam (Table 2). Treatments were ten soybean varieties, including both conventional and organic varieties, which were grown organically and evaluated for yield and oil content. The experimental design was a randomized complete block with four replications. The research plots were 5' x 25'. The previous crop was rye followed by soybeans, and the seedbed was plowed and disked. The soybeans were planted in 30" rows on 1-June at a rate of 200,000 seeds per acre. Mechanical strategies were implemented to control weeds in the plots. Plots were harvested on 1-Nov with an Almaco SP50 plot combine. Moisture was measured with a Dickey-John M20P moisture meter; test weight was measured with Berckes test weight scale.

Table 2. Agronomic & trial information for the 2011 soybean variety trial.

Location

Table 4. Soybean harvest and oil content data by variety.

Variety	Harvest moisture	Yield @ 13% moisture	Test weight	Pressing moisture	Oil content	Oil yield
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At the time of pressing, the average moisture content of the stored soybeans was 12.2%, slightly lower than the average harvest moisture. Pressing moisture of the beans did not differ significantly by variety (Table 4). The oil content was not statistically significant by variety. However, total oil yield did differ statistically by variety, with the highest yield in the variety Dares (69.4 gal per acre). Five other varieties were statistically similar to this highest yield, including 'PB5B130R' (Mycogen), Boyd, 11A1, 16C1, and 1F44 (Figure 4). The lowest oil yield was in the variety 'PB5B080R2.'

Figure 4. Oil yield by variety. The trialed soybean varieties with the same letter did not differ sN0 Tc 0 Tw 2.6516 09412 o.59 0

here that a higher soybean yield is not necessarily correlated with a higher oil yield due to varying oil contents. For example, the variety 16C1 had the highest soybean yield but was outperformed in oil yield by four other varieties because of its low oil content (7.9%). The trial average for oil yield was 52.8 gallons per acre. The varieties Dares, PB5B130R, and Boyd were all among the top five performers for both soybean and oil yield. On a dry matter basis, the average yield of soybean meal, which is very valuable as high-protein, high-energy livestock feed, was 3,546 lbs per acre for this trial.

Variety selection should involve both high-yielding varieties and those with high oil content. Varieties must be selected based on the goals of the grower, and it should be recognized that these results are only from one location and one season. Growers should consider varietal performances from multiple seasons and locations before making decisions about which varieties will work for them.

ACKNOWLEDGEMENTS

UVM Extension would like to thank Borderview Farm for their generous help with this research trial, as well as the Vermont Sustainable Jobs Fund for funding the research. Thank you to Katie Blair, Chantel Cline, Savanna Kittell-Mitchell, Laura Madden, and Susan Monahan for their assistance with data collection and entry. This information is presented with the understanding that no product discrimination is intended and neither endorsement of any product mentioned, nor criticism of unnamed products, is implied.