



2017 SOYBEAN

The soil type at the Alburgh location was Benson rocky silt loam (Table 3). The seedbed was prepared using a moldboard plow and then disked prior to seeding. The previous crop was annual cover crop mixtures. Plots were planted on 31-May with a Monosem NG-Plus 2-row precision air planter (Edwardsville, KS). Plots were 20' long and consisted of two rows spaced at 30 inches. The seeding rate was 185,000 seeds ac⁻¹. The plot design was a randomized complete block with three replications. The treatments were 14 varieties that ranged in maturity group from 0.5 to 1.8.

Table 3. Soybean trial specifics for Alburgh, VT, 2017.

	Borderview Research Farm Alburgh, VT
Soil types	Benson rocky silt loam 8-15% slope
Previous crop	Cover crop mixtures
Tillage operations	Moldboard plow and disc
Plot size (feet)	5 x 20
Row spacing (inches)	30
Replicates	3
Planting date	31-May
Harvest date	28-Oct

On 28-Oct, the soybeans were harvested using an Almaco SPC50 small plot combine. Seed was cleaned with a small Clipper M2B cleaner (A.T. Ferrell, Bluffton, IN). They were then weighed for plot yield, tested for harvest moisture using a DICKEY-John Mini-GAC Plus moisture meter, and evaluated for test weight using a Berckes Test Weight Scale.

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.

Hybrid	Yield
A	6.0
B	7.5*
C	9.0*
LSD	2.0

RESULTS

Table 5. Harvest characteristics of soybean varieties – Alburgh, VT, 2017.

Variety	Company	Maturity group	Harvest moisture	Test weight	Yield @ 13% moisture	
			%	lbs bu ⁻¹	lbs ac ⁻¹	bu ac ⁻¹

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DISCUSSION

Despite poor weather conditions throughout much of the growing season the organic soybeans performed reasonably well. However, yields this year averaged 750 lbs ac⁻¹ less than last year when warmer and drier than normal conditions were experienced throughout much of the growing season. These data suggest that, even in years with suboptimal weather conditions, soybeans have the potential to produce seed yields over 1 ton ac⁻¹ and oil yields over 30 gal ac⁻¹ in our region where the growing season is quite short. However, it should be recognized that these data only represent one season and should not be used alone to make management decisions.

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Figure 1.

