

# 2010 Oat Variety Trial Report



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# 2010 VERMONT OAT VARIETY TRIAL

## INTRODUCTION

Oats (*Avena sativa* L.) have a long history of being grown in the Northeast. Although most of the oats are planted for a cover crop or hay, growing oats for grain is another potential revenue source for farmers. According to the 2007 census, about 200 acres of land in Vermont is cultivated for oat grain production, with an average yield of 1747 lbs/acre. Unless, a hullless variety is grown, oats need to be hulled before being used for human consumption, and further processing is required to make oatmeal, steel cut oats or oat flour. The goal of this project was to evaluate yields and processing characteristics of oat varieties.

## METHODS

Oat variety trials were planted at Borderview Research Farm in Alburgh, VT and Butterworks Farm in Westfield, VT on April 13, 2010. The experimental plot design was a randomized complete block with four replications. Oat varieties evaluated are listed in Table 1.

**Table 1: Oat varieties planted in Alburgh and Westfield, VT.**

Oat Varieties	Seed Source
Bia	La Coop Fédérée
Esker	Albert Lea Seed House
Morton	Albert Lea Seed House
Nice	La Coop fédérée
Reeves	Albert Lea Seed House
Tack	Albert Lea Seed House

## CULTURAL PRACTICES

The seedbeds in Alburgh and Westfield were prepared by conventional tillage methods. All plots were managed with practices similar to those used by producers in the surrounding areas (Table 2). The plots were seeded with a Carter cone seeder and harvested with an Alma 219.61BT1 L4

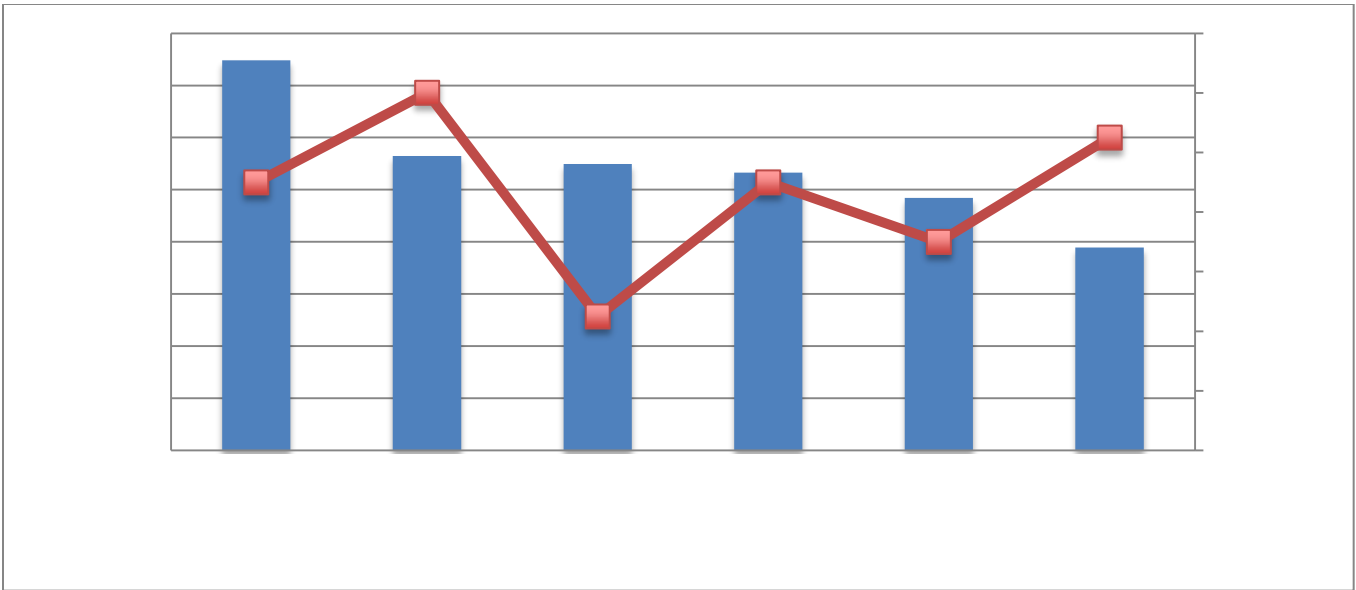
	<b>Alburgh, VT</b>	<b>Westfield, VT</b>
Soil type	Benson rocky silt loam	Dixfield sandy loam
Previous crop	Grass sod	Grass sod
Row spacing (in.)	6	6
Seeding rate	125 lbs./acre	125 lbs./acre
Replicates	4	4
Planting date	4/13/10	4/13/10
Harvest date	7/27/10	7/28/10
Harvest area (ft.)	5x20	5x20
Tillage operations	Fall plow, disc, & spike-toothed harrow	Fall plow, disc, & spike toothed harrow

## **WEATHER**

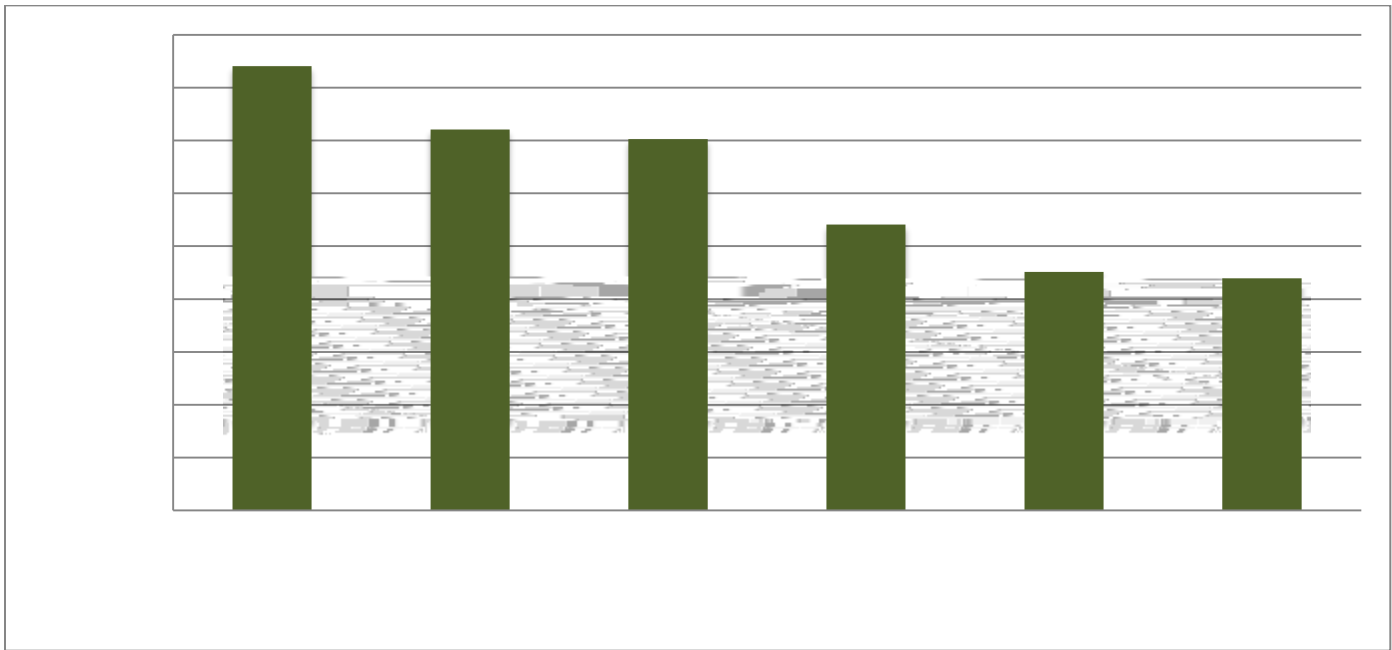
Seasonal precipitation and temperature recorded at weather stations in close proximity to Alburgh and Westfield are shown in Tables 3 and 4. From planting to harvest, there was an accumulation of approximately 3,699 Growing Degree Days (GDD) at both locations. This is 367 GDDs more than the 30-year average in Alburgh, and 497 GDDs more than the 30-year average in Westfield.

**Table 3**

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 varieties 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 (e.g. yield). Least Significant Difference (LSD) at the 10% level of probability is shown. Where the difference between two varieties within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure in 9 out of 10 chances that there is a real difference between the two varieties. Oat varieties that were not significantly lower in performance than the highest variety in a particular column are indicated with an asterisk. In the example below variety A is significantly different from variety C but not from variety B. The difference between A and B is equal to 725 which is less than the LSD value of 889. This means that these varieties did not differ in yield. The difference between A and C is equal to 1454 which is greater than the LSD value of 889. This means that the yields of these varieties were



**Figure 1: Oat yields and test weight in Alburgh, VT. Oat varieties did not differ significantly in yield or test weight.**



**Figure 2: Oat yields in Westfield, VT. Varieties with the same letter did not differ significantly in yield ( $P < 0.10$ ).**

We are currently investigating how to evaluate oat varieties for foodgrade quality. Some of these quality characteristics may include measuring grain size, groat percentage (after hulling), color grade, hulling efficiency, protein, oil and b-glucan content. Continued evaluation across a range of growing season conditions will be required to find those varieties most suited for this climate.

The UVM Extension Crops and Soils Team would like to thank Borderview Research Farm and Butterworks Farm for their generous help with the trials. Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended. UVM Extension helps individuals and communities put research-based knowledge to work.

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