

Winter Grain Research in Maine

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There has been a lot of interest in winter grain production, especially in light of the wild grain prices we are experiencing in both the conventional and organic grain markets. Last year, we started a SARE project “Expanding Grain Production in Maine and Vermont LNE06-240” with Heather Darby and Sid Bosworth from UVM and Tim Griffin from the USDA /ARS New England Plant Soil and Water Lab in Orono. The spring grains we planted in 2006 were a disappointment, both in terms of forage yields, (harvested in either the boot stage or soft dough stages) and grain yields (remember the weather last year?).

In the fall of 2006 we planted a number of winter grains and experimented with planting dates as well as trying to evaluate how best to provide fertility to these grains in an organic system. Concurrently, Henry Perkins from Bull Ridge Farm in Albion initiated a SARE Farmer/Grower trial investigating winter spelt for forage and grain production. Henry also is evaluating three different fall planting dates.

While all the data we have so far on winter grains is preliminary and relates to forage yield, we can draw some conclusions, especially about planting dates and the impact on forage yields the following spring. When you look at the tables and pictures, you can see that there was a significant decrease in forage yield and canopy closure in the spring by delaying the planting date of winter grains from the middle of September to the middle of October. This is even more significant if we consider how warm our fall was in Maine with warmer than normal temperatures through December. We will see if this ultimately translates into a reduced grain yield later this summer.

We have data on the boot stage harvest from some replicated trials at the University of Maine Rogers Farm, with spelt, wheat, rye and Triticale. Table 1 shows the two planting dates 9/20 and 10/17 and the impact of boot stage forage yield in pounds of dry matter per acre.

Table 1. Boot stage forage yield
Early Planting (Sept 20 2006), Rogers West

	Date Harvested	DM Yld lbs. Per acre
Rye	21-May	926
Oberhuaser Spelt	8-Jun	3377
Sungold Spelt	8-Jun	2583
Tritical 336	29-May	3068
Trical 815	4-Jun	1419
Frederick Wheat	8-Jun	3186
Richland Wheat	8-Jun	2639

Preliminary grain yields in pounds per acre (8/15)

	Early	Late
Fredrick Wheat	4518	NA
Richland Wheat	4505	2806
Ober Spelt	3900	2250
Sungold Spelt	3547	2727
AlzoTrit	NA	2806
Trit 336	3905	2094
Trit 815	3101	1271
Winter Rye	3613	1914

Late Planting (Oct 17 2006), Rogers West

Rye	29-May	303
Oberhuaser Spelt	15-Jun	2592
Sungold Spelt	11-Jun	2164
Tritical 336	4-Jun	1083
Trical 815	15-Jun	723
Alzo Triticale	15-Jun	1988

The pictures of the following plots indicate the difference we saw in the planting dates of Triticale 336 and Oberhauser Spelt earlier this spring.

Richland Wheat

11-Jun

2208



Trical 336 planted 10/17/06



Trical 336 planted 9/20/06



Oberhauser spelt planted 10/17/06



Oberhauser spelt planted 9/20/06

At Henry's farm we measured the yield of winter spelt in replicated trials in the boot stage (5/31/07) planted at three different dates last fall (9/15, 9/30 and 10/15).

Table 2.

Bull Ridge Farm Winter Spelt

Planting Date	1-Sep	15-Sep	15-Oct
Yield DM lbs/acre	3400	2600	840
Stems/meter row	125	107	84



Winter spelt planted at Henry Perkins on 9/1/06 (left) and 10/15 (right). The unwilling participant in the picture is about 5'8" tall.

Another of our farmer researchers in Maine, Jeff Bragg from Rainbow Valley Farm in Sidney planted a number of winter grains for us on his farm on 9/16/06. His yield data for Trical 336 in the boot stage yielded 3.56 tons of dry matter per acre on May 31st! His yields of other small grains were similar to our data from the early planted Rogers Farm.

Table 3.

Rainbow Valley Farm Boot Stage 5/31/07

	Yield lbs/acre Dry matter
Trical 336	7120
Wheat (Frederick)	3260
Spelt	3400
Wheat (Richland)	2800
Rye	3120



Triticale Harvest Boot stage 5/31/07 (Yield of 3.56 tons dry matter/acre)

We have been very excited about the opportunities for organic dairy farmers to grow winter grains to reduce the cost of purchased supplements. We will continue to trial both spring and winter grains to try and fine tune organic management practices. Tim Griffin is researching nitrogen management practices for winter grains and alternative methods that organic farmers might be able to use to apply manure to winter grains in the spring to provide some needed nitrogen.

Many of these trials have also been replicated in Vermont under the watchful eyes of Heather Darby.