

## FEED GRAIN AND BEDDING MATERIAL FROM SPRING SOWN CEREALS

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In Massachusetts there continues to be a shortage of an adequate supply of suitable bedding materials for dairy farms. Some farmers in New England have tried with success growing spring oats, growing needed straw and reasonable yields of feed grain.

In 1982 six oat varieties were evaluated at the Experiment Station Farm in South Deerfield for grain and straw production. In 1983 three additional oat varieties were evaluated together with three barley varieties. These were planted late April both years and yields are presented in Table 1.

Table 1 Grain and Straw Yields of Oat and Barley

Variety	Grain				Straw	
	1982 lb/ac	1983 lb/ac	1982 bu/ac	1983 bu/ac	1982 ton/ac	1983 ton/ac
Ogle	4645	5029	145	157	3.1	3.1
Porter	4602	4183	144	131	3.6	3.7
Lyon	4266	3463	133	108	3.1	3.4
Lodi	4012	4208	125	132	2.5	3.3
Stout	3866	3479	121	109	2.8	3.6
Dal	3595	3357	112	105	3.1	3.3
OAC Woodstock	-	4373	-	137	-	3.2
Donald	-	3562	-	111	-	3.1
Fidler	-	3330	-	104	-	2.8
<u>Barley</u>						
Leger	-	4932	-	103	-	2.9
Bedford	-	3529	-	74	-	2.4
Norbert	-	3036	-	63	-	2.1

Grain 13% moisture; straw 12% moisture

The oat varieties Ogle and Porter produced the highest grain yields in 1982 and Ogle had the highest yield in 1983. Ogle has been one of the most promising varieties in other studies in the region. Ogle is a short stiff strawed variety developed and released by Illinois in 1981. In 1983 the variety Leger had the highest barley yield and this was similar to Ogle oat. The bushel weight of barley used was 48 lb/bu compared to 32 lb/bu for the oats.

All oat varieties produced considerable amounts of straw suitable for bedding. Considering prices some farmers are paying for such bedding materials the yields achieved in these trials are of importance.

Ogle oat was also included in an adjacent study in 1982 where it was compared with Lud barley and Sinton wheat, a spring variety. These were planted April 23, 1982 at three seeding rates of 1½, 2½ and 3½ bu/ac. Harvest maturity

was reached in late July. There were large differences in yield among the three species but no differences or interaction was found for the seeding rate variable. Thus only the main species effect has been presented in Table 2.

Table 2 Grain and Straw Yields of Barley Oat and Wheat

Species and Variety	Grain		Straw ton/ac	Bushe1 Wt. 1b
	bu/ac	1b/ac		
Lud Barley	77	3720	2.0	48
Ogle Oat	156	4989	2.7	32
Sinton Wheat	35	2084	1.8	60

Grain 13% moisture; straw 12% moisture

Ogle oat produced 34% more grain yield than the barley and more than twice the yield of the spring wheat. The components of grain yield in Table 3 help to explain these differences. In Sinton wheat the number of productive tillers surviving to maturity was substantially below that of the other two species, spikelet number per ear was greater than both species and grain size was less than that for the barley. Only grain number per spikelet was higher but this did not compensate for the reductions in the other components. Ogle oat was capable of yielding more than the other species as a result of an intermediate number of productiver tillers surviving to maturity by having 1½ times as many spikelets per ear as barley and 2½ times as many as the wheat, by forming and filling more grains than both other species. Lud barley did produce more productive tillers and had large seeds but these components did not compensate for the lower level of other components compared to oats.

Table 3 Grain Yield Components of Barley, Oat and Wheat

Variety and Species	No. Ears/m <sup>2</sup>	No. Spikelets/ear	No. Grains/Spikelet	Grain size mg
Lud Barley	387	21.3	1.0	44
Ogle Oat	255	32.8	1.9	31
Sinton Wheat	172	13.1	2.5	32

Considering the modest levels of straw produced by the wheat and barley our recommendation at this time would be for farmers to consider growing Ogle oat or another high yielding oat variety if the situation fits and you are in need of feed grain and bedding straw. Leger barley might also be suitable if these yields are found to be consistantly high in future years.