

POTENTIAL FOR WINTER OAT PRODUCTION IN KENTUCKY

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In Kentucky there are approximately 1000 acres of oats produced on around 90 farms annually. Of the winter small grain crops grown in Kentucky, oats are the least cold tolerant and most susceptible to winter kill. Most oats produced in the U.S. are spring oats grown in cooler northern states such as Minnesota, Wisconsin, North and South Dakota. Kentucky is at the northern range of the winter oat production area. Winter oats are used for livestock feed as either grain or forage/silage. The standard grain test weight for oats is 32 lbs/bu compared with 60 lbs/bu for wheat. This explains why oat grain yields of 140 bu/a are not unusual. The low test weight is due to the energy rich “groat” grain being covered by a fibrous hull and volumetrically a substantially greater portion of air space per bushel.

In Kentucky, oats should be planted between September 20 – October 15 at a rate of 70-90 lbs seed/acre for grain and 100-120 lbs for forage production. Fungicide seed treatments are an inexpensive and effective method of protecting seeds and seedlings from disease. Insecticide seed treatments will also provide some protection from fall insects, such as aphids which can be an issue with early fall planting in warmer conditions. Management of oats is similar to wheat with the exception of spring N fertilization, where a single application of 60 lbs N is recommended in early March. Excessive N rates can cause lodging and disease issues. Oat grain reaches harvest maturity at approximately the same time as a mid-late maturing wheat.

Kentucky Small Grain Variety Performance Test Results are available at <http://www.uky.edu/Ag/wheatvarietytest/>. The University of Kentucky program evaluates winter oat varieties for grain yield and other agronomic characteristics, such as test weight, plant height, winter hardiness, and lodging.

In Table 18, Kentucky Oat Variety Test yield data are presented for the 2017 and 2018 tests. Twelve traditional oat lines and four European oat varieties were evaluated in 2018. In 2018, winter survival ranged from 0 to 84%, whereas in 2017, winter survival was near 100% (data not shown). Winter survival for the four 2018 European oat varieties ranged between 0 and 14% (these European oats were not harvested due to the lack of stands and delayed maturity).

In 2018, grain yields ranged from 9.4 bu/a to 76.9 bu/A and averaged 39.3 bu/A (European oat data not included), whereas in 2017, grain yields for similar varieties ranged from 100.9 to 157.2 bu/A and averaged 131.8 bu/A. The 2017 oat variety test averaged nearly 100 more bu/A than in 2018. These tests were planted in mid-October in the Bluegrass Region (Lexington, KY). In January of 2017 and 2018, overnight low temperatures at this location were in single digits for 3 and 12 days, respectfully. Average monthly winter temperatures for this location during the 2016-17 season were consistently higher than the 30 year average. Winter temperature departures were closer to average for this same period during the 2017-18 growing season (UK Ag Weather Center).

The winter survival and yield data for these seasons indicate that successful oat production in Kentucky is unpredictable. Its success or failure is primarily dependent on the magnitude and duration of low winter temperatures, but also a variety’s winter hardiness, stand establishment and potential snow cover. Grain producers must weigh the winter survival risk when contracting for oat grain production. Selection of a high yielding variety with a good winter survival rating and planting early at recommended seeding rates offers the best insurance for maximizing oat production potential.

TABLE 18. 2018 KENTUCKY OAT VARIETY TEST

VARIETY	Grain Yield		Test Wt.	Height	Lodging	Winter
	(Bu/A)*		(Lb/bu)	(In)	(%)	Survival
	2018	2017	2018	2018	2018	2018
NC12-3578	76.9	153.5	31.7	34	0	84
NC12-3447	64.6	157.2	30.2	34	0	71
SS 76-50	59.8	126.7	30.7	33	0	70
NC12-3922	53.7		30.9	32	0	71
NC09-4274N	50.7	100.9	32.6	33	0	75
CCBO4	41.3	110.0	25.4	33	19	41
Gerard 224	38.6	130.8	25.9	28	18	44
Gerard 229	35.4	138.4	26.5	30	0	51
RAM 99016	15.6	135.6	25.8	27	0	13
Horizon 306	13.0	130.3	22.3	27	0	18
CCBO3	12.9	134.3	22.8	26	5	9
Horizon 270	9.4		19.9	25	36	14
Maestro**						14
Mascani**						10
Tardis**						4
Griffin**						0
Average	39.3	131.8	27.0	30.2	6.5	46.8

Planted 10-17-17 and harvested 6-20-18 at Fayette Co., KY.
 * 32-lb standard bushel weight; Winter Survival (%)
 ** Late Maturing European Oat - not harvested.