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Ohio Performance Trials of Spring Oat Cultivars

Including 1999 Results

R. W. Gooding and L.D. Herald



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PERFORMANCE TRIALS OF SPRING OAT CULTIVARS IN OHIO – 1999 Season¹

Robert W. Gooding and Larry D. Herald²

1999 Ohio Oat Growing Conditions and Production:

Dry weather during the last two weeks of March permitted farmers to prepare fields and plant the oat crop about 11 days earlier than the 5-year average. Therefore, the normal progression of the crop from emergence through maturity resulted in a harvest that was essentially complete by the first week of August, two weeks ahead of average.

Early planting probably contributed to a favorable production climate even though the growing season was drier and warmer than normal. At an average of 75 bu. per acre, Ohio's oat yields were over 15 percent higher compared to yields in 1998. Harvested acres remained stable compared to previous years at 100,000 acres for an overall production in Ohio of 7.5 million bushels, an increase of 1 million bushels compared to the previous year.

Nationally in 1999, at 162 million bushels, oat production declined by three percent compared to 1998. Oats stored in all positions on September 1 totaled 148 million bu., 8 percent below the previous September. Indicated disappearance during June to August, 1999 totaled 102 million bu., 24 percent higher than the same period in 1998.

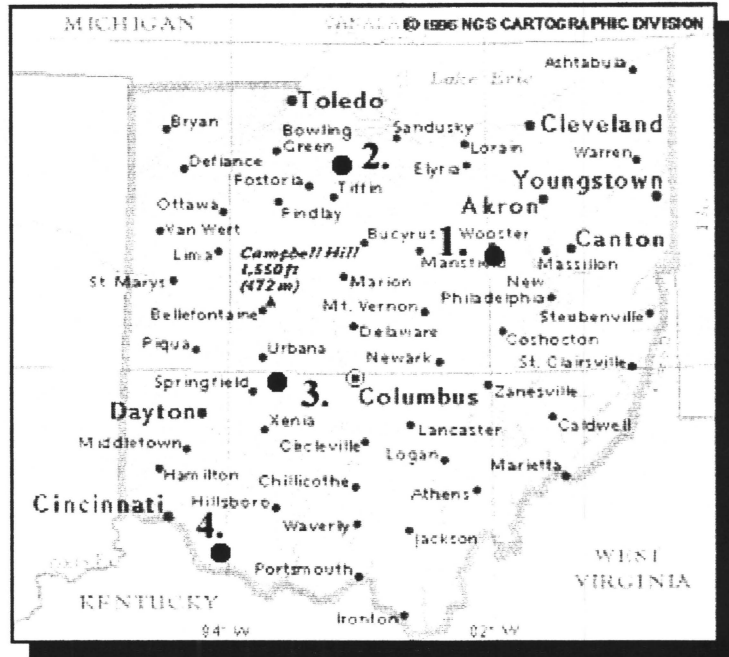


Figure 1. Location of Test Sites in Ohio

¹Acknowledgment is given to the farm managers and crews of the Wooster Horticulture and Crop Science Research Farm and branch research facilities of The Ohio State University, Ohio Agricultural Research and Development Center for their excellent cooperation.

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Statewide Drilled Plot Yield Test:

The objective of this oat cultivar evaluation is to provide an unbiased evaluation of cultivar characteristics and performance expectations for the soils and climates of Ohio. In 1999, spring oat performance trials were sown at the following four agricultural research stations located in Ohio (*Fig. 1*):

- 1) **Main Campus O.A.R.D.C., Wooster**
- 2) **Vegetable Crops Branch, O.A.R.D.C., Fremont**
- 3) **Western Branch O.A.R.D.C., South Charleston**
- 4) **Southern Branch O.A.R.D.C., Ripley.**

Entries in the test were limited to experimental lines from the Ohio Agricultural Research & Development Center oat breeding program and cultivars thought to have potential for good performance in the soils and climates of Ohio.

Fertilization at each site was uniform and conformed to fertilizer recommendations published in the Ohio Agronomy Guide. Nitrogen was applied at 40 to 60 lbs/a at each location depending on soil organic matter content. All locations were drilled in 7-inch rows, 7 to 11 rows per plot and averaged 100 feet in length.

Test Results:

Table 1 presents yield data from the four locations planted in 1999. The Vegetable Crops Branch was the most productive followed by OARDC Wooster, Southern Branch, and Western Branch. Armor was ranked first for yield when averaged across the four locations followed by experimental lines: OH1149, OH1128, OH1131, OH1146, OH1101, and OH1148. Statistically, none of these lines was significantly different in average yield from Armor.

Table 2 compares test weights of the 16 entries at the four locations. OH1149, OH1128, GR65, OH1101, and Armor were the top five entries ranked for test weight. Note that OH1149, OH1128, OH1101, and Armor were also in the top group ranked for yield in the previous table.

Table 3 presents additional agronomic data averaged across the four locations. Chairman was ranked first for date headed. MF9225-120 was ranked first for plant height as the shortest of the 16 entries, and was also ranked first for lowest lodging percentage; this is as expected considering that short stature often translates to low lodging scores.

Tables 4 through 7 provide 1999 data as well as long term data when available from each of the four test sites. **Table 8** provides long-term yield data from 1982 through 1999 and **Table 9** presents a summary of averaged data describing agronomic characteristics for spring oat varieties entered in these tests since 1982.

Brief descriptions of cultivars of interest to Ohio growers follow the data tables.

***This report can be accessed by visiting our Website at:
<http://www.oardc.ohio-state.edu/smgrain>***

Table 1. 1999 Yield of 16 Spring Oat Varieties at Four Locations in Ohio.

Variety	OARDC	Veg. Crops Br.	Western Br.	Southern Br.	Average
	Wooster	Fremont	S. Charleston	Ripley	4-loc
			—bu/a—		
ARMOR	87.4	101.3	67.6	73.4	81.1
OH1149	97.2	96.7	59.9	64.9	81.0
OH1128	91.4	86.2	64.8	74.3	79.9
OH1131	84.5	85.3	68.8	71.7	79.1
OH1146	86.4	84.6	71.9	70.2	78.6
OH1101	88.4	87.6	65.8	67.3	78.2
OH1148	89.4	81.2	69.5	73.8	78.1
OH1065	88.5	85.3	66.3	63.2	76.5
KEYSTONE 98	79.4	98.2	64.6	59.4	75.7
GR65	89.0	90.2	56.8	60.3	75.0
BURTON	80.7	85.4	65.5	71.5	73.5
OGLE	71.5	81.4	70.0	71.2	73.1
RODEO	73.8	87.3	70.3	62.4	72.6
CHAIRMAN	84.4	75.0	56.9	68.4	71.2
NOBLE	88.9	81.9	50.7	59.6	69.3
MF9225-120	79.0	82.4	53.7	61.2	68.6
Mean	85.0	86.9	63.9	67.0	75.7
LSD.05:	5.6	6.2	3.4	8.3	3.9
CV(%):	4.6	4.9	3.7	8.6	7.5

Table 2. Test Weight of 16 Spring Oat Varieties at Four Locations in Ohio in 1999.

Variety	OARDC	Veg. Crops Br.	Western Br.	Southern Br.	Average
	Wooster	Fremont	S. Charleston	Ripley	4-loc
--bu/a--					
OH1149	31.7	34.6	34.4	34.2	33.7
OH1128	30.7	34.8	34.0	33.7	33.3
GR65	31.6	33.9	31.6	32.9	32.5
OH1101	30.3	33.5	32.5	32.5	32.2
ARMOR	30.8	32.7	32.2	32.2	32.0
BURTON	30.3	33.1	31.3	32.4	31.8
MF9225-120	29.7	33.1	31.9	31.7	31.6
OH1065	30.1	33.4	30.1	32.2	31.4
NOBLE	31.0	32.6	30.3	31.4	31.3
OH1146	29.2	33.4	30.2	31.3	31.0
OH1131	28.1	32.7	31.1	32.2	31.0
RODEO	30.9	33.0	31.6	27.8	30.8
OGLE	28.9	32.5	30.1	30.6	30.5
KEYSTONE 98	27.5	32.6	30.7	29.5	30.1
CHAIRMAN	28.8	32.4	28.8	29.3	29.8
OH1148	27.5	32.5	28.6	30.3	29.8
Mean	29.8	33.1	31.2	31.5	31.4

Table 3. Average Days to Heading, Plant Height, and Percent Lodging of 16 Spring Oat Varieties at 4 Locations in Ohio in 1999.

VARIETY	Date Headed	rank	Plant Height	rank	Lodging	rank
	(julian)	(early-late)	(in.)	(short-tall)	(%)	(lowest-highest)
ARMOR	159	12	29.5	12	1.3	3
BURTON	158	9	29.8	14	2.4	10
CHAIRMAN	157	1	28.5	5	2.0	7
GR65	158	5	31.8	16	2.5	11
KEYSTONE 98	159	13	30.9	15	1.4	4
MF9225-120	164	16	27.8	1	1.1	1
NOBLE	157	2	29.4	11	2.6	12
OGLE	158	4	28.9	7	1.6	5
RODEO	160	15	28.5	4	2.8	13
OH1065	159	14	29.2	10	3.2	14
OH1101	159	10	28.9	6	3.2	15
OH1128	159	11	27.9	2	2.3	8
OH1131	158	7	29.7	13	5.4	16
OH1146	158	6	29.0	8	1.3	2
OH1148	157	3	29.2	9	2.4	9
OH1149	158	8	28.2	3	1.8	6
Test Mean:	158.5		29.2		2.3	
LSD.05:	0.5		0.9		ns	

Table 4. Summary of Agronomic Characteristics for Spring Oat Varieties at the Ohio Agricultural Research and Development Center/OSU, Wooster, Ohio, 1990-1999.

VARIETY	YIELD (bu/a)	rank	DAYS TO HEADING (julian)	PLANT HEIGHT (in.)	LODGING (%)	TEST WT. (lb/bu)	rank
-----7-yr. averages 1992-1999*-----							
ARMOR	97.1	1	169	35.2	13.9	33.6	3
BURTON	92.7	2	169	36.1	22.8	34.5	1
CHAIRMAN	89.7	3	166	33.9	13.1	32.7	4
NOBLE	87.4	5	168	34.5	14.9	34.2	2
OGLE	87.6	4	168	34.4	15.5	32.2	5
MEAN:	90.9		168.0	34.8	16.0	33.4	
-----4-yr. averages 1996-1999-----							
ARMOR	99.9	1	168	38.2	21.3	33.2	3
BURTON	94.1	2	167	39.8	27.0	33.6	1
CHAIRMAN	89.7	6	165	37.3	19.5	32.0	4
KEYSTONE 98	92.6	3	168	40.4	18.8	30.7	6
NOBLE	90.5	5	166	38.3	21.3	33.4	2
OGLE	91.9	4	167	38.1	23.3	32.0	5
MEAN:	93.1		166.9	38.7	21.9	32.5	
-----1999-----							
ARMOR	87.4	8	157	79.7	0.0	30.8	5
BURTON	80.7	12	157	82.7	0.0	30.3	8
CHAIRMAN	84.4	11	156	75.7	0.0	28.8	13
GR65	89.0	4	157	85.1	0.0	31.6	2
KEYSTONE 98	79.4	13	158	81.5	0.0	27.5	16
MF9225-120	79.0	14	163	70.7	0.0	29.7	10
NOBLE	88.9	5	156	82.6	0.0	31.0	3
OGLE	71.5	16	156	75.3	0.0	28.9	12
RODEO	73.8	15	160	71.7	0.0	30.9	4
OH1065	88.5	6	158	78.1	0.3	30.1	9
OH1101	88.4	7	157	78.1	0.3	30.3	7
OH1128	91.4	2	158	75.2	0.3	30.7	6
OH1131	84.5	10	157	80.1	2.8	28.1	14
OH1146	86.4	9	157	75.9	0.0	29.2	11
OH1148	89.4	3	156	78.6	0.3	27.5	15
OH1149	97.2	1	157	73.9	0.0	31.7	1
Mean:	81.6		157.7	78.3	0.0	29.9	
LSD.05:	5.6		0.8	3.8	0.1		
CV(%):	4.6						

*Yield and Test Weight Data unavailable in 1994 & 1995.

Table 5. Summary of Agronomic Characteristics for Spring Oat Varieties at the Vegetable Crops Branch, Fremont, Ohio, 1999

VARIETY	YIELD (bu/a)	rank	DAYS TO	PLANT	LODGING (%)	TEST WT.	rank
			HEADING (julian)	HEIGHT (in.)		(lb/bu)	
-----1999-----							
ARMOR	101.3	1	160	29.2	1.3	32.7	10
BURTON	85.4	8	159	28.3	1.3	33.1	7
CHAIRMAN	75.0	16	156	27.2	0.0	32.4	16
GR65	90.2	4	158	31.7	0.0	33.9	3
KEYSTONE 98	98.2	2	159	30.8	0.0	32.6	12
MF9225-120	82.4	12	164	28.2	0.0	33.1	8
NOBLE	81.9	13	157	28.0	0.0	32.6	13
OGLE	81.4	14	158	27.0	0.0	32.5	15
RODEO	87.3	6	160	28.8	0.0	33.0	9
OH1065	85.3	9	160	27.9	1.3	33.4	5
OH1101	87.6	5	159	28.6	0.0	33.5	4
OH1128	86.2	7	159	27.4	0.0	34.8	1
OH1131	85.3	10	158	29.0	2.5	32.7	11
OH1146	84.6	11	159	28.0	0.0	33.4	6
OH1148	81.2	15	158	28.4	0.0	32.5	14
OH1149	96.7	3	159	28.0	0.0	34.6	2
MEAN:	86.9		158.8	28.5	0.4	33.1	
LSD.05:	6.2		0.9	1.4	2.0		
CV(%):	4.9						

Table 6. Summary of Agronomic Characteristics for Spring Oat Varieties at Western Branch, South Charleston, Ohio, 1990-1999.

VARIETY	YIELD (bu/a)	rank	DAYS TO HEADING (julian)	PLANT HEIGHT (in.)	LODGING (%)	TEST WT. (lb/bu)	rank
-----8-yr. averages 1992-1999-----							
ARMOR	61.1	1	168	32.6	10.3	32.9	3
BURTON	59.1	2	166	33.6	6.2	33.9	1
CHAIRMAN	53.4	4	165	32.1	5.6	32.0	5
NOBLE	49.3	5	166	32.6	7.0	33.5	2
OGLE	58.9	3	165	32.7	9.2	32.1	4
MEAN:	56.4		165.9	32.7	7.7	32.9	
-----4-yr. averages 1996-1999-----							
ARMOR	64.6	1	168	33.7	20.1	32.1	2
BURTON	60.9	3	166	34.9	10.0	32.3	1
CHAIRMAN	56.1	5	164	33.0	9.4	30.1	6
KEYSTONE 98	60.5	4	167	35.5	5.4	31.5	4
NOBLE	51.8	6	166	34.0	12.9	31.8	3
OGLE	63.3	2	165	33.4	17.3	30.4	5
MEAN:	59.5		166.0	34.1	12.5	31.4	
-----1999-----							
ARMOR	67.6	6	160	26.5	0.0	32.2	4
BURTON	65.5	9	159	27.8	0.0	31.3	8
CHAIRMAN	56.9	13	158	26.5	0.0	28.8	15
GR65	56.8	14	159	29.0	0.0	31.6	7
KEYSTONE 98	64.6	11	160	28.0	0.0	30.7	10
MF9225-120	53.7	15	164	26.5	0.0	31.9	5
NOBLE	50.7	16	158	27.0	0.0	30.3	11
OGLE	70.0	3	159	26.5	0.0	30.1	14
RODEO	70.3	2	160	26.3	0.0	31.6	6
OH1065	66.3	7	159	27.5	0.0	30.1	13
OH1101	65.8	8	160	27.0	0.0	32.5	3
OH1128	64.8	10	160	25.8	0.0	34.0	2
OH1131	68.8	5	159	25.5	3.3	31.1	9
OH1146	71.9	1	159	27.0	0.0	30.2	12
OH1148	69.5	4	158	27.0	0.0	28.6	16
OH1149	59.9	12	160	27.0	0.0	34.4	1
Mean:	63.9		159.3	26.9	0.2	30.9	
LSD.05:	3.4		0.8	2.2	0.8		
CV(%):	3.7		0.4	5.8	295.4		

Table 7. Summary of Agronomic Characteristics for Spring Oat Varieties at the Southern Branch, Ripley, Ohio, 1990-1999.

VARIETY	YIELD (bu/a)	rank	DAYS* TO HEADING (julian)	PLANT HEIGHT (in.)	LODGING (%)	TEST WT. (lb/bu)	rank
-----8-yr. averages 1992-99*-----							
ARMOR	77.5	1	167	36.9	12.5	32.0	5
BURTON	73.6	2	167	38.8	18.3	34.1	1
CHAIRMAN	69.7	4	165	34.0	17.8	32.4	4
NOBLE	62.7	5	165	35.8	18.2	32.6	3
OGLE	70.1	3	166	37.4	18.8	32.8	2
MEAN:	70.7		166.3	36.6	17.1	32.8	
-----4-yr. averages 1996-1999-----							
ARMOR	77.1	1	167	39.0	15.3	30.3	3
BURTON	74.1	2	166	40.6	17.9	33.1	1
CHAIRMAN	65.4	5	165	33.5	16.9	30.2	4
KEYSTONE 98	68.7	4	167	39.2	10.2	29.9	6
NOBLE	60.1	6	165	36.8	21.3	30.1	5
OGLE	72.2	3	166	39.5	18.0	30.8	2
MEAN:	69.6		165.9	38.1	16.6	30.7	
-----1999-----							
ARMOR	73.4	3		31.3	6.0	32.2	6
BURTON	71.5	5		31.3	9.9	32.4	5
CHAIRMAN	68.4	8		30.5	8.3	29.3	15
GR65	60.3	14		32.8	7.7	32.9	3
KEYSTONE 98	59.4	16		33.0	7.3	29.5	14
MF9225-120	61.2	13		29.0	6.8	31.7	9
NOBLE	59.6	15		30.5	8.7	31.4	10
OGLE	71.2	6		32.0	3.7	30.6	12
RODEO	62.4	12		30.8	8.3	27.8	16
OH1065	63.2	11		30.0	11.2	32.2	8
OH1101	67.3	9		29.3	12.5	32.5	4
OH1128	74.3	1		28.8	9.0	33.7	2
OH1131	71.7	4		32.5	16.3	32.2	7
OH1146	70.2	7		30.8	6.7	31.3	11
OH1148	73.8	2		30.5	9.2	30.3	13
OH1149	64.9	10		28.3	4.1	34.2	1
MEAN:	67.0			30.7	8.5	31.4	
LSD.05:	8.3			1.8	7.7		
CV(%):	8.6						

* 6-year avg. Days to Heading not available in 1994 or 1995.

Table 8. Yield of Spring Oat Varieties in Ohio Trials, 1982-1999.

Variety	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Rank	Avg.	Avg.	Avg.			
	4	5	5	5	4	5	5	4	5	6	5	6	6	4	4	4	3	4	1999	36 Trials	rank	47 Trials	rank	84 Trials	rank
	Trials																		only	(1992-99)		(1990-99)		(1982-99)	
	-----bu/a-----																			(bu/a)		(bu/a)		(bu/a)	
OGLE	91.0	92.1	84.5	105.7	120.9	84.4	68.7	95.2	92.7	79.6	69.8	60.5	66.0	93.3	53.5	101.2	75.9	73.1	12	72.8	3	75.8	2	81.1	1
NOBLE	79.8	76.8	77.0	98.3	99.2	77.7	59.2	77.5	80.8	72.3	81.8	50.8	54.2	85.7	49.9	89.5	59.7	69.3	15	66.5	5	68.8	3	72.4	2
ARMOR									96.8	84.3	89.3	65.3	71.9	90.6	58.5	109.6	73.8	81.1	1	79.2	1	81.7	1		
BURTON											93.1	67.2	72.7	97.5	58.4	100.9	69.0	73.5	11	78.7	2				
CHAIRMAN											89.5	56.6	61.4	92.8	52.8	93.3	62.2	71.2	14	71.7	4				
OH1065													76.3	92.0	57.3	105.1	74.0	76.5	8						
KEYSTONE 98													74.0	94.0	57.2	103.0	68.3	75.7	9						
OH1128														98.6	58.3	106.9	76.3	79.9	3						
OH1149															58.9	104.1	76.6	81.0	2						
RODEO																107.9	77.8	72.6	13						
MF9225-120																87.6	73.4	68.6	16						
GR65																	65.2	75.0	10						
OH1131																		79.1	4						
OH1148																		78.1	7						
OH1146																		78.6	5						
OH1101																		78.2	6						
MEAN:	85.4	84.5	80.8	102.0	110.1	81.1	64.0	86.4	90.1	78.7	84.7	60.1	68.1	93.1	56.1	100.8	71.0	75.7		73.8		75.4		76.8	

Table 9. Summary of Agronomic Characteristics of Spring Oat Varieties in Ohio Trials, 1982-1999, & 1992-1999.

Variety	Days to Heading		Plant Ht.		Lodging		Test weight	
	68 trials (1982-99)	27 trials (1992-99)	67 trials (1982-99)	31 trials (1992-99)	67 trials (1982-99)	28 trials (1992-99)	64 trials (1982-99)	29 trials (1992-99)
	(julian)		---(in.)---		-----(%)------		(lb/bu.)	
NOBLE	164.0	167.7	33.8	33.3	13.5	14.4	33.9	33.6
OGLE	164.0	167.9	34.3	33.9	12.9	14.0	32.7	32.5
ARMOR		169.6		33.8		13.2		32.9
CHAIRMAN		166.6		32.4		12.1		32.5
BURTON		169.5		34.8		15.3		34.1
MEAN:	164.0	168.3	34.0	33.6	13.2	13.8	33.3	33.1

Brief Descriptions of Spring Oat Cultivars

Armor - Armor was released by the Ohio Agricultural Research and Development Center in 1991. It is stiff-strawed with excellent yield potential, exceeding Noble, Ogle, and Porter in yield in statewide Ohio tests. Armor is a midseason cultivar with medium height. It is resistant to BYDV but susceptible to crown rust.

Brawn - This cultivar was released by the University of Illinois Agricultural Experiment Station and the USDA in 1993. Brawn has large, "brawny", yellow kernels. It has been equal to, or slightly better than, Ogle for yield in Illinois trials and in Ohio. It has crown rust and smut resistance and is moderately tolerant to BYDV. Brawn is a day later in maturity than Armor and several days later than Ogle.

Burton - Burton was released in 1996. It is a productive oat cultivar bred for Ohio and surrounding states. Burton is a high-yielding line, similar to Armor, averaging over 16% higher in yield than Ogle in Ohio tests from 1992 through 1994. Burton is similar to Armor in appearance and in resistance to lodging but is somewhat taller. It is midseason in maturity being equal to Armor and a day later than Ogle. Burton has excellent test weight averaging over 35 lbs/ bu in Ohio tests. Burton is less tolerant to Barley Yellow Dwarf Virus (BYDV) than either Armor or Ogle but is similar to Noble. Burton does not possess resistance to prevalent races of crown rust and should not be grown in areas in which this disease is a problem.

Chairman - Chairman was officially released by the Ohio Agricultural Research and Development Center in September, 1995. Chairman was released because of its high yield potential and early maturity. It is comparable to 'Ogle' and 'Armor' in yield while being two and three days earlier, respectively, in maturity. Chairman is susceptible to current races of crown rust (*Puccinia coronata*) showing a reaction similar to Ogle to this disease.

Dal - Released by the Wisconsin Agricultural Experiment Station in 1972, it is moderately late in maturity and of medium to tall height. It has good lodging resistance, large, plump kernels, high test weight and high groat protein. Dal has excellent resistance to smut and leaf rust, but is susceptible to Septoria and barley yellow dwarf virus. A U.S. Protected Variety, seed of this variety can be sold only as a class of certified seed.

Dane - Released by the Wisconsin Agricultural Experiment Station in 1990, it is early in maturity, averaging 5 days earlier than Ogle in both Wisconsin and Ohio tests, and has excellent yield potential. Dane has yellow kernels with high groat percentage. Test weights are average and straw strength is excellent. Although susceptible to barley yellow dwarf virus in screening tests, Dane has demonstrated field tolerance under severe natural infection.

GR 65 - A new white-seeded oat that is well adapted for production in humid states where spring oats are grown and crown rust is not a problem. GR 65 has averaged about 4% lower in yield than Ogle and is slightly taller and later in maturity. It has somewhat better lodging resistance than Ogle and produces well-filled, white seed that averages a 2 to 4 lb/bu heavier test weight than Ogle.

Hercules - A 1986 release by the Pennsylvania Agricultural Experiment Station, Hercules is a high yielding variety with excellent lodging resistance and test weight. It is resistant to currently known races of loose smut, and moderately resistant to BYDV, but susceptible to prevalent races of crown rust and stem rust.

Ida - Released by the Michigan Agricultural Experiment Station in 1997, Ida is a large-seeded white oat with good test weight. It is medium in height with good lodging tolerance. Ida is one day later than Ogle in maturity. Ida has consistently been one of the highest yielding oat lines in Michigan tests.

MF HiProN - A new naked-seeded spring oat that is adapted for production in the spring oat regions where oat crown rust is not a problem, MF HiProN is similar to Ogle in plant height, maturity, lodging resistance, and yield when adjusted for its lack of hulls. It has excellent expression of the naked-seeded trait and the grain should be especially useful for feeding horses and young animals with a high energy requirement.

Newdak - A 1990 cultivar released jointly by the Agricultural Experiment Station of North Dakota State University and Cornell. Newdak is about a day earlier than Ogle in Ohio tests. It has excellent resistance to crown rust and tolerance to BYDV. Newdak has white hulls under unweathered conditions.

Noble - A 1973 Indiana release, it has good yield, good test weight and stiff, medium-short straw. It is medium-early in maturity, with moderate resistance to barley yellow dwarf virus and some of the oat rusts. A U.S. Protected Variety, seed can be sold only as a class of certified seed.

Ogle - A 1981 Illinois release, it has excellent yield capabilities with good test weight and will yield well under a wide range of environments. Ogle is medium-early in maturity with medium-short, stiff straw and moderate resistance to oat rusts. It has excellent resistance to barley yellow dwarf virus.

Pennuda - A 1987 release by the Pennsylvania Agricultural Experiment Station, Pennuda is an early maturing, lodging resistant naked-seeded cultivar with a relatively high yield potential. When compared to other cultivars on a dehulled basis, Pennuda yields comparably to cultivars such as Noble and Hamilton. It is high in protein and digestible energy and is especially useful in rations for poultry, swine and young animals. Pennuda is moderately resistant to BYDV but is susceptible to crown rust and loose smut.

Porter - A 1982 Purdue University release, it is rather late in maturity, but has an excellent yield record. It is resistant to barley yellow dwarf virus and moderately resistant to crown rust. A U.S. Protected Variety, seed of this variety can be sold only as a class of certified seed.

Rodeo - Released in 1996 by the Illinois Agricultural Experiment Station of the University of Illinois in cooperation with the USDA-ARS, Rodeo is a spring oat adapted to north-central and northeastern United States. It heads 2 days earlier than Ogle. Rodeo is moderately tolerant to BYDV and moderately resistant to crown rust (*Puccinia coronata*). Rodeo is susceptible to loose smut (*Ustilago avenae*) and to most races of stem rust (*Puccinia graminis*). Rodeo has yellow kernels and is nonfluorescent under UV light. Non-twisted awns occur infrequently.

The cultivars Armor, Burton, Chairman, MF HiProN, Noble, and Ogle were grown by Ohio Certified Seed Producers in 1999. All other cultivars may not be available from Ohio suppliers unless purchased or produced out-of-state.

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