Oat Variety Trial
2019 Results

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Maine typically grows 20,000-30,000 acres of oats per year, mostly for feed markets, however, demand for food grade oats is increasing. In 2019, we trialed 29 varieties of oats at two locations in Maine. All except one were sourced as food grade types, and 7 were free-threshing hulless or 'naked' types.

Table 1. Oat varieties evaluated in Old Town and Mapleton, Maine in 2019.

Variety	Type	Developer
AAC Nicolas	Covered	Secan
AAC Noranda	Covered	Semican
AAC Richmond	Covered	Semican
Antigo	Covered	Univ. of Wisconsin
Beach	Covered	North Dakota State University
Canmore	Covered	Semican
CDC Arborg	Covered	Semican
CDC Orrin	Covered	Semican
CDC Ruffian	Covered	Semican
Colt	Covered	North Dakota State University
CS Camden	Covered	Secan
Deon	Covered	Univ. of Minnesota
Hayden	Covered	South Dakota State University
Jury	Covered	North Dakota State University
Newburg	Covered	North Dakota State University
Orford	Covered	Semican
Reins	Covered	Univ. Illinois
Rockford	Covered	North Dakota State University
Shelby	Covered	South Dakota State University
Souris	Covered	North Dakota State University
Sumo	Covered	South Dakota State University
Casino	Hulless	Semican
Gehl	Hulless	Semican
Idaho	Hulless	Semican
Navaro	Hulless	Semican
Shadow	Hulless	Semican
12ANS01	Hulless	Semican
15ANS06	Hulless	Semican
Everleaf	Covered, forage/cover crop	Secan

METHODS

The trials were conducted at the University of Maine Rogers Research Farm, in Old Town, and Buck Farms, in Mapleton. The locations were managed using organic practices in Old Town and conventional practices in Mapleton. Agronomic practices for both locations are described in Table 2.

Table 2. Agronomic practices in Old Town and Mapleton, Maine in 2019.

	Old Town	Mapleton
Previous Crop	Potato	Potato
Soil Type	Nicholville very fine sandy loam	Caribou gravely loam
pH	6.2	5.9
Pre-plant Fertility	16 tons/acre solid dairy manure (approx. 50 lb/acre of nitrogen)	225 lb/acre of 19-0-19 at planting (43 lb/acre of nitrogen)
Planting Date, Rate	May 9, 1.25 million live seeds/acre	May 24, 1.40 million live seeds/acre
Topdress Nitrogen	June 4, 62 lb/acre Chilean nitrate (10 lb/acre of nitrogen)	None
Weed Control	May 31, cultivation and tine harrow	June 9, MCPA Rhomene – 1 pt/acre
Fungicide	None	None
Harvest Date	August 7	September 1

RESULTS

Monthly average weather conditions are presented in Table 3 and agronomic results in Table 4. For each column in Table 4, the greatest value is indicated with underlining and bold type. Varieties that are not significantly different from the greatest value are also in bold type. Each column also has at the bottom the site average, least significant difference (LSD), and coefficient of variation (CV). The LSD is the minimum difference needed between two varieties to consider them statistically different at a 95% confidence level. The CV measures the variability of the data, which influences how easy it is to detect difference among the varieties.

Table 3. Monthly rainfall totals and average temperatures in Old Town and Caribou in 2019.

	Total Rainfall (inches)				Temperature (F)			
	Old Town		Caribou†		Old Town		Caribou†	
Month	2019	30-yr avg.	2019	30-yr avg.	2019	30-yr avg.	2019	30-yr avg.
April	3.8	3.8	4.8	2.5	41	41	38	39
May	3.0	3.8	3.2	3.4	49	53	49	52
June	3.6	4.1	2.9	3.4	60	62	60	61
July	1.9	3.6	2.5	3.7	69	67	69	66
August	6.4	3.3	2.5	3.7	65	66	65	64
Total	18.8	18.6	15.9	16.7				

† The weather station in Caribou is approximately 20 miles from the Mapleton site. 30-year norms are from 1981 to 2010.

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Table 4. Agronomic characteristics of oat varieties grown in Old Town and Mapleton in 2019.

		Yield† (bu/acre)		Grain Moisture‡ (%)		Foliar Disease Severity (1 - 9) §		Plant Ht. (in)		Test Wt. (lbs/bu)		TKW† (g)		Heading date (days after 5/31)	
	Variety	Old Town	Mapleton	Old Town	Mapleton	Old Town	Mapleton	Old Town	Mapleton	Old Town	Mapleton	Old Town	Mapleton	Old Town	Mapleton
Covered	AAC Nicolas	**105**	**91**	13	-	2.3	-	35	-	36	36	33	32	44	-
	AAC Noranda	**120**	**89**	14	-	2.0	-	41	-	36	36	**36**	34	41	-
	AAC Richmond	95	76	15	-	2.0	-	36	-	37	37	36	39	42	-
	Antigo	84	67	13	-	**4.0**	-	37	-	**41**	**40**	25	24	31	-
	Beach	86	82	13	-	2.0	-	39	-	**41**	**40**	**38**	38	37	-
	Canmore	85	**89**	12	-	2.3	-	42	-	36	**39**	33	36	39	-
	CDC Arborg	94	**87**	13	-	2.0	-	38	-	37	38	**37**	35	42	-
	CDC Orrin	**102**	**91**	13	-	**2.7**	-	41	-	38	38	35	37	39	-
	CDC Ruffian	**102**	**95**	13	-	2.0	-	38	-	39	37	**37**	37	40	-
	Colt	74	73	13	-	**2.7**	-	35	-	**40**	39	30	31	31	-
	CS Camden	**107**	**88**	12	-	2.0	-	37	-	39	37	**37**	35	40	-
	Deon	**102**	84	13	-	1.7	-	40	-	39	38	34	34	40	-
	Hayden	**109**	76	13	-	2.0	-	**45**	-	**42**	**39**	**37**	35	36	-
	Jury	**109**	**95**	13	-	2.3	-	39	-	38	39	33	37	40	-
	Newburg	**114**	79	13	-	1.7	-	**49**	-	39	37	33	32	38	-
	Orford	81	83	14	-	2.0	-	33	-	38	38	32	33	44	-
	Reins	85	78	12	-	**2.7**	-	30	-	38	**39**	34	33	32	-
	Rockford	**97**	72	13	-	2.3	-	41	-	**41**	**39**	31	28	40	-
	Shelby	77	73	12	-	2.0	-	38	-	**41**	39	31	31	35	-
	Souris	86	76	12	-	2.0	-	36	-	**40**	37	32	31	37	-
	Sumo	90	69	12	-	**3.0**	-	39	-	**42**	39	**37**	36	31	-
Hulless	Casino	63	61	14	-	2.3	-	38	-	.	**.**	26	28	43	-
	Gehl	45	46	15	-	**2.7**	-	42	-	.	.	25	30	40	-
	Idaho	59	56	14	-	2.3	-	38	-	.	**.**	27	29	42	-
	Navaro	68	55	15	-	2.0	-	36	-	.	.	29	28	43	-
	Shadow	58	51	14	-	2.3	-	38	-	.	**.**	24	31	43	-
	12ANS01	47	56	14	-	2.0	-	37	-	.	.	28	27	41	-
	15ANS06	65	46	14	-	2.0	-	39	-	.	.	28	26	42	-
	Everleaf*	77	64	**35**	-	2.0	-	.	-	33	34	28	30	**50**	-
	Site average	86	74	14	-	2	-	38	-	39	38	32	32	39	-
	LSD (0.05)	24	10	1.4	-	1	-	5	-	2	1	2	2	2	-
	CV%	29	21	30	-	30	-	12	-	7	4	14	12	11	-

† Yield is reported at 13.5% moisture. ‡ Measured at time of harvest. § Scored visually using a scale from 1 = none to 9 = severe. † Thousand kernel weight. *Forage type