

**RECOMMENDED
OAT VARIETIES
FOR MONTANA BY DISTRICT**

Variety	District					
	1	2	3	4	5	6
Ajay	IH	I	I	I	I	I
Monico	DI	DI	DI	DI	DI	DI
Monida	DI	DI	DI	DI	DI	DI
Otana	DI	DI	DI	DI	DI	DI
Maverick	I	I	I	I	I	I

I = Irrigated
D = Dryland
H = High rainfall

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2005 SPRING OAT MISCELLANEOUS NURSERY AND REPORTING INFORMATION

SEEDING RATES:

IRRIGATED AND HIGH MOISTURE LOCATIONS: 1.0 gram of seed /square foot

DRYLAND LOCATIONS: 0.7 grams of seed /square foot

2005 MULTI YEAR DATA COLLECTED

Plant Height Height in inches from ground to top of canopy at harvest.

Heading Date Reported in Julian days (days from January 1) Recorded when 50% of panicles in plot are fully emerged.

Test Weight Pounds per bushel of cleaned grain. Measured by standard method using quart container and converting grams per quart to pounds per bushel.

Yield Yield in bushels per acre based on standard 32 pound bushel weight.

2005 MULTI YEAR DATA REPORTING INFORMATION:

The comparable average for oats is calculated by using a pre-determined check variety (Monico) to establish an "average check yield" -- as for example, a 7-year period. By using comparable averages, all varieties are then directly comparable to each other even with a different number of locations.

The more years of production data available for any particular variety, the more reliable is the "comparable average figure". Although data is given for entries with less than three years, averages using less than three years data may be unreliable in predicting future performance.

Comparable Average

Illustration of Formula: (Pacer - 4 years at Sidney Dryland - page 10)

Check Variety (Monico) 7 year average	= 132.30
Check Variety (Monico) Average yield for last 4 years	= 123.65
Variety (Pacer) in question: Average yield for last 4 years	= 109.93

$\frac{\text{Pacer}}{\text{Check (Monico)}}$	$\frac{4 \text{ year avg. yield}}{4 \text{ year avg. yield}}$	or	$\frac{109.93}{123.65}$	= 88.90%
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To convert Pacer yield to the 7 year comparable average:

.8890 (Pacer) X 132.3 (Monico 7 year avg.) = **117.6 bu/a for Pacer**

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 1 Kalispell (High Moisture)
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	185.1	7	36.4	6	175.8	7	36.3	7	13.9
Otana *	7	183.8	7	37.3	6	177.4	7	43.3	7	15.8
Monida *	7	178.7	7	33.4	6	179.7	7	40.5	7	13.6
Killdeer	6	176.9	6	36.6	5	174.4	6	37.1	6	14.5
CDC Pacer	4	194.1	4	36.6	3	176.7	4	40.4	4	12.7
Maverick *	7	191.1	7	34.5	6	176.4	7	32.3	7	13.6
CDC Dancer	4	179.4	4	37.8	3	177.0	4	42.0	4	13.5

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	230.0	143.1	211.0	249.6	96.2	203.9	161.8	185.1	7
Otana *	242.0	162.5	189.2	205.6	98.1	181.2	207.8	183.7	7
Monida *	252.9	164.1	190.1	200.3	101.1	195.6	146.8	178.7	7
Killdeer	0.0	124.2	191.5	221.1	93.4	198.6	189.8	176.9	6
CDC Pacer	0.0	0.0	0.0	246.7	114.6	192.6	192.2	194.0	4
Maverick *	221.3	212.4	191.9	241.5	96.8	186.9	186.6	191.0	7
CDC Dancer	0.0	0.0	0.0	225.4	108.0	185.3	171.1	179.4	4

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	38.2	33.9	35.5	36.2	38.5	39.1	33.6	36.4	7
Otana *	39.6	36.3	36.1	36.7	36.8	37.9	37.6	37.3	7
Monida *	36.6	31.7	33.7	33.4	34.6	35.3	28.8	33.4	7
Killdeer	0.0	35.5	36.3	37.0	37.6	37.8	33.8	36.6	6
CDC Pacer	0.0	0.0	0.0	37.2	36.9	39.5	34.7	36.7	4
Maverick *	37.7	32.7	31.6	34.5	34.0	38.1	33.0	34.5	7
CDC Dancer	0.0	0.0	0.0	38.3	38.4	38.3	37.9	37.8	4

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 2 Bozeman Irrigated
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	6	166.5	6	38.0	6	185.2	6	34.6	4	14.7
Otana *	6	143.9	6	37.9	6	186.1	6	39.5	4	15.2
Monida *	6	152.9	6	34.8	6	187.9	6	36.7	4	14.4
Killdeer	6	164.6	6	37.7	6	184.3	6	34.5	4	14.1
CDC Pacer	3	144.1	3	37.2	3	186.1	3	39.6	3	14.9
Maverick *	6	158.6	6	35.3	6	186.3	6	29.7	4	14.6
CDC Dancer	4	154.8	4	38.8	4	185.4	4	40.0	3	14.9

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2005	Comp Ave.	No. of Yrs.
Monico *	149.3	195.8	204.5	144.5	163.0	142.0	166.5	6
Otana *	142.1	161.5	190.8	110.9	143.8	114.3	143.9	6
Monida *	140.4	178.1	182.1	127.2	170.2	119.6	152.9	6
Killdeer	138.1	195.1	200.2	153.4	158.9	141.8	164.6	6
CDC Pacer	0.0	0.0	0.0	117.7	160.2	111.2	144.1	3
Maverick *	133.0	186.5	192.3	156.6	159.1	123.8	158.5	6
CDC Dancer	0	0	211	108	162	127	154.7	4

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2005	Comp Ave.	No. of Yrs.
Monico *	40.4	38.4	41.5	37.2	37.5	33.0	38.0	6
Otana *	40.0	37.7	40.3	36.6	39.4	33.2	37.8	6
Monida *	36.7	33.1	38.1	34.6	35.5	30.8	34.8	6
Killdeer	38.2	38.6	40.6	37.6	37.2	34.1	37.7	6
CDC Pacer	0.0	0.0	0.0	35.4	37.6	32.4	37.2	3
Maverick *	36.4	35.5	39.4	33.3	36.0	31.1	35.2	6
CDC Dancer	0.0	0.0	40.7	38.6	38.1	34.6	38.8	4

1999-2005 SPRING OAT VARIETY PERFORMANCE

District 3 Huntley Irrigated

Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	210.3	7	38.6	7	172.1	6	44.5	4	13.0
Otana *	7	181.1	7	38.3	7	173.2	6	49.8	4	14.0
Monida *	7	194.7	7	35.5	7	176.4	6	47.3	4	12.7
Killdeer	7	180.5	7	37.9	7	171.3	6	42.2	4	13.2
CDC Pacer	4	187.6	4	37.9	4	174.3	3	48.4	2	12.7
Maverick *	7	204.5	7	36.3	7	174.2	6	39.6	4	13.2
CDC Dancer	5	180.8	5	40.1	5	173.0	4	48.9	3	13.3

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	262.6	208.8	221.1	248.4	163.9	205.3	161.8	210.2	7
Otana *	225.3	207.5	198.0	193.0	159.0	194.1	91.1	181.1	7
Monida *	247.8	243.5	200.1	208.2	163.2	181.3	118.5	194.6	7
Killdeer	249.3	181.3	214.6	188.6	130.7	192.5	106.9	180.5	7
CDC Pacer	0.0	0.0	0.0	213.7	159.4	229.9	92.2	187.5	4
Maverick *	267.4	203.5	241.1	220.1	145.1	188.9	165.5	204.5	7
CDC Dancer	0.0	0.0	206.8	195.9	134.5	209.5	113.5	180.7	5

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	37.6	42.4	36.9	38.9	35.3	39.0	40.1	38.6	7
Otana *	38.2	41.7	35.9	38.3	36.6	39.1	38.1	38.3	7
Monida *	36.6	40.1	33.6	34.7	31.0	36.0	36.7	35.5	7
Killdeer	37.8	41.7	35.0	36.1	37.1	38.2	39.5	37.9	7
CDC Pacer	0.0	0.0	0.0	38.5	33.9	39.4	38.7	37.9	4
Maverick *	36.1	41.1	34.2	36.5	30.9	36.8	38.1	36.2	7
CDC Dancer	0.0	0.0	37.4	39.9	40.3	39.4	40.7	40.1	5

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 6 Sidney Irrigated
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	6	192.4	6	37.6	6	174.2	6	39.0	5	11.1
Otana *	6	181.4	6	37.3	6	176.3	6	43.0	5	12.8
Monida *	6	183.0	6	34.4	6	178.0	6	40.4	5	11.6
Killdeer	5	192.7	5	35.5	5	174.3	5	38.6	4	11.4
CDC Pacer	3	178.8	3	35.8	3	176.5	3	40.8	2	10.5
Maverick *	6	186.3	6	35.0	6	176.3	6	33.6	5	11.3
CDC Dancer	3	185.6	3	37.5	3	175.4	3	42.4	2	11.8

Yield in bushels per acre

Pedigree	1999	2000	2001	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	195.8	208.1	161.1	198	220.0	171.8	192.4	6
Otana *	175.3	213.2	140	185.3	220.1	154.4	181.4	6
Monida *	177.3	203.7	151.1	183.8	219.4	162.6	183.0	6
Killdeer	0.0	217.1	160.9	212.1	201.9	167.9	192.6	5
CDC Pacer	0.0	0.0	0.0	169.0	219.7	159	178.8	3
Maverick *	199.5	221.1	153.8	194.8	210.1	138.4	186.3	6
CDC Dancer	0.0	0.0	0.0	175.3	215.1	178.2	185.6	3

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	37.5	37.7	33.3	38.2	40.7	38.2	37.6	6
Otana *	38.7	38.2	33.0	37.2	39.3	37.5	37.3	6
Monida *	35.7	35.5	29.8	34.8	36.5	34.2	34.4	6
Killdeer	0.0	35.8	30.2	36.7	37.2	37.5	35.5	5
CDC Pacer	0.0	0.0	0.0	35.7	38.7	37.0	35.7	3
Maverick *	37.7	35.0	31.0	34.8	36.0	35.7	35.0	6
CDC Dancer	0.0	0.0	0.0	37.8	40.5	38.5	37.5	3

1999-2005 SPRING OAT VARIETY PERFORMANCE
Irrigated Locations⁽¹⁾
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	26	189.3	26	37.6	25	176.6	25	38.5	20	13.2
Otana *	26	173.3	26	37.7	25	178.1	25	43.9	20	14.6
Monida *	26	178.0	26	34.5	25	180.3	25	41.2	20	13.1
Killdeer	24	178.7	24	37.0	23	175.9	23	37.9	18	13.4
CDC Pacer	14	180.1	14	37.0	13	178.1	13	42.2	11	12.6
Maverick *	26	186.1	26	35.3	25	178.1	25	33.8	20	13.2
CDC Dancer	16	176.4	16	38.8	15	177.4	15	43.3	12	13.2

⁽¹⁾ Irrigated Locations: Sidney, Huntley , Bozeman, Kalispell (High Moisture)

1999-2005 Spring Oat T-Paired Comparison vs Monico Yield (bu/ac)

NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE*
Otana	173.3	26	-16.0	-3.4	.002
Monida	178.0	26	-11.2	-3.0	.006
Killdeer	176.2	24	-11.1	-2.7	.012
CDC Pacer	169.9	14	-10.9	-1.5	.149
Maverick	186.1	26	-3.2	-.8	.430
CDC Dancer	170.4	16	-14.3	-2.8	.013

THE MEAN FOR THE REFERENCE VARIETY (Monico) IS: 189.3 (N= 26)

* **P-VALUE**- Denotes level of significance between check variety (Monico) and variety in question. P-value of .01 = 99/100 probability of means being different from check due to random chance. Only comparison between Monico and other varieties are valid, cannot compare other varieties to each other.

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 3 Huntley Dryland
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	59.0	7	34.3	7	171.7	7	28.5	5	13.8
Otana *	7	50.3	7	34.0	7	173.2	7	33.8	5	14.4
Monida *	7	53.5	7	31.2	7	176.8	7	29.9	5	13.5
Killdeer	6	53.5	6	34.0	6	169.2	6	29.2	4	14.8
CDC Pacer	4	56.4	4	33.8	4	172.6	4	32.4	3	13.1
Maverick *	7	57.2	7	31.7	7	175.7	7	24.9	5	13.9
CDC Dancer	4	56.0	4	36.5	4	172.2	4	33.3	3	14.2

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	81.2	71.7	33.7	31.2	69.1	61.6	64.1	59.0	7
Otana *	62.8	51.7	31.3	26.2	65.6	66.0	48.2	50.3	7
Monida *	65.3	64.9	40.7	15.9	67.7	58.9	61.0	53.5	7
Killdeer	0.0	52.5	28.2	25.2	71.4	67.2	56.1	53.5	6
CDC Pacer	0.0	0.0	0.0	21.5	70.6	69.0	55.3	56.4	4
Maverick *	80.8	67.7	35.6	23.1	61.3	61.8	70.5	57.3	7
CDC Dancer	0.0	0.0	0.0	22.1	72.3	66.7	53.4	56.0	4

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	28.3	38.9	40.6	25.5	33.8	40.9	32.3	34.3	7
Otana *	28.6	37.2	40.7	24.6	35.2	38.5	32.8	34.0	7
Monida *	26.2	37.6	37.2	20.8	31.3	36.9	28.2	31.1	7
Killdeer	0.0	38.2	40.5	27.1	34.3	39.7	30.6	34.0	6
CDC Pacer	0.0	0.0	0.0	26.6	34.3	38.9	30.7	33.8	4
Maverick *	26.6	38.0	38.1	21.3	30.9	38.0	29.3	31.7	7
CDC Dancer	0.0	0.0	0.0	29.7	38.0	39.5	33.8	36.5	4

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 4 Moccasin Dryland
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	62.9	7	31.8	6	186.3	6	27.7	7	13.9
Otana *	7	62.3	7	32.5	6	186.8	6	33.1	7	14.6
Monida *	7	63.5	7	30.6	6	189.4	6	28.2	7	14.2
Killdeer	6	64.2	6	32.9	5	184.5	5	29.9	6	14.8
CDC Pacer	4	66.2	4	30.9	3	186.1	3	32.3	4	13.2
Maverick *	7	63.1	7	29.6	6	187.1	6	25.3	7	14.5
CDC Dancer	4	57.5	4	33.2	3	186.2	3	31.9	4	13.7

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	76.7	75.0	88.7	49.6	24.0	69.9	56.2	62.9	7
Otana *	74.1	72.0	76.9	56.6	21.5	72.1	63.1	62.3	7
Monida *	70.3	81.3	83.5	53.3	26.6	74.0	55.5	63.5	7
Killdeer	0.0	70.7	92.8	51.2	23.6	72.6	60.2	64.2	6
CDC Pacer	0.0	0.0	0.0	54.2	23.4	79.7	53.2	66.2	4
Maverick *	69.2	74.7	84.9	46.4	25.9	72.7	67.7	63.0	7
CDC Dancer	0.0	0.0	0.0	48.4	29.4	63.7	41.2	57.4	4

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	30.1	31.3	34.4	34.1	29.6	28.1	34.7	31.8	7
Otana *	32.8	31.9	35.5	34.8	29.1	29.3	34.4	32.5	7
Monida *	27.4	35.1	32.2	32.6	28.6	27.2	30.7	30.5	7
Killdeer	0.0	32.9	35.0	35.3	30.8	30.8	34.2	32.8	6
CDC Pacer	0.0	0.0	0.0	33.3	28.8	28.0	32.9	30.8	4
Maverick *	28.7	30.4	29.0	33.6	27.4	27.5	30.8	29.6	7
CDC Dancer	0.0	0.0	0.0	35.7	29.9	31.3	35.5	33.2	4

1999-2005 SPRING OAT VARIETY PERFORMANCE
District 5 Havre Dryland
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	72.3	7	32.9	6	182.3	7	26.1	5	14.8
Otana *	7	67.8	7	32.9	6	181.8	7	32.3	5	16.0
Monida *	7	70.7	7	30.6	6	185.1	7	29.4	5	14.8
Killdeer	6	71.2	6	32.7	5	180.5	6	28.2	5	15.4
CDC Pacer	4	71.3	4	30.6	3	182.7	4	30.2	3	13.7
Maverick *	7	73.8	7	30.3	6	183.3	7	24.5	5	15.7
CDC Dancer	4	68.5	4	33.5	3	183.0	4	31.7	3	15.2

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	111.3	77.0	29.7	72.5	25.3	72.3	117.9	72.3	7
Otana *	108.7	73.9	33.6	67.3	21.1	69.6	100.3	67.8	7
Monida *	103.8	80.5	37.7	70.5	24.2	73.9	104.1	70.7	7
Killdeer	0.0	79.1	35.8	64.5	24.1	75.5	109.8	71.2	6
CDC Pacer	0.0	0.0	0.0	72.3	24.3	77.4	110.3	71.3	4
Maverick *	106.1	72.5	37.5	78.0	29.0	77.7	116.0	73.8	7
CDC Dancer	0.0	0.0	0	68.1	19.9	69.3	115.7	68.5	4

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	33.5	35.8	37.0	34.6	30.2	31.4	27.5	32.9	7
Otana *	33.1	35.4	36.8	33.5	30.9	31.9	29.0	32.9	7
Monida *	29.3	33.4	35.9	32.0	30.3	28.6	24.5	30.6	7
Killdeer	0	35.7	35.0	33.0	30.3	32.7	28.8	32.6	6
CDC Pacer	0.0	0.0	0.0	32.8	26.5	29.9	26.2	30.6	4
Maverick *	29	33.1	36.1	31.9	28.1	28.4	25.3	30.2	7
CDC Dancer	0.0	0.0	0.0	35.5	27.3	33.3	30.1	33.5	4

1999-2005 SPRING OAT VARIETY PERFORMANCE

District 6 Sidney Dryland

Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	7	132.3	7	37.1	7	173.0	7	31.1	6	11.7
Otana *	7	123.4	7	36.8	7	174.1	7	36.9	6	12.7
Monida *	7	130.3	7	35.0	7	175.9	7	34.2	6	11.9
Killdeer	7	128.9	7	36.9	7	172.3	7	30.9	6	11.5
CDC Pacer	4	117.6	4	36.9	4	173.9	4	35.2	3	12.4
Maverick *	7	131.2	7	35.4	7	173.9	7	27.3	6	12.0
CDC Dancer	5	122.1	5	37.7	5	173.6	5	36.5	4	12.1

Yield in bushels per acre

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	168.0	152.2	111.4	65.4	128.3	153.8	147.1	132.3	7
Otana *	160.0	143.5	102.4	61.7	125.9	135.7	134.6	123.4	7
Monida *	178.0	152.2	117.8	52.3	124.3	147.7	139.7	130.3	7
Killdeer	169.6	152.2	99.1	57.6	131.5	147.0	145.7	128.9	7
CDC Pacer	0.0	0.0	0.0	44.7	124.0	148.4	122.6	117.6	4
Maverick *	169.4	149.7	116.5	69.5	122.3	147.0	143.9	131.2	7
CDC Dancer	0.0	0.0	101.0	49.7	127.3	142.5	138.7	122.1	5

Test weight in pounds per bushel

Pedigree	1999	2000	2001	2002	2003	2004	2005	Comp Ave.	No. of Yrs.
Monico *	39.5	40.5	37.7	31.3	37.0	35.7	38.2	37	7
Otana *	38.8	39.3	37.5	31.5	36.8	37.0	36.8	36.8	7
Monida *	37.7	38.3	38.0	29.7	32.8	33.5	34.8	35.0	7
Killdeer	38.0	39.2	36.8	32.8	38.3	36.0	36.8	36.9	7
CDC Pacer	0.0	0.0	0.0	32.2	36.7	36.5	35.8	37	4
Maverick *	38.0	39.0	37.8	29.2	34.2	33.7	36.2	35	7
CDC Dancer	0.0	0.0	37.8	32.7	37.5	36.2	38.3	38	5

1999-2005 SPRING OAT VARIETY PERFORMANCE
Dryland Locations ⁽¹⁾
Overall Agronomic Summary

Pedigree	#	Yield	#	Test Wt	#	Heading	#	Plant Ht.	#	Protein %
	Yrs	(bu/ac)	Yrs	(lb/bu)	Yrs	Date	Yrs	inches	Yrs	
Monico *	28	81.6	28	34.0	26	177.9	27	28.4	23	13.5
Otana *	28	76.0	28	34.1	26	178.6	27	34.0	23	14.3
Monida *	28	79.5	28	31.8	26	181.4	27	30.5	23	13.6
Killdeer	25	79.4	25	34.1	23	176.4	24	29.4	21	14.0
CDC Pacer	16	77.3	16	33.0	14	178.4	15	32.4	13	13.1
Maverick *	28	81.3	28	31.8	26	179.6	27	25.5	23	14.0
CDC Dancer	17	75.7	17	35.2	15	178.4	16	33.3	14	13.7

⁽¹⁾ **Dryland Locations:** Havre, Sidney, Moccasin, Huntley

1999-2005 Spring Oat T-Paired Comparison vs Monico Yield (bu/ac)

NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE*
Otana	76.0	28	-5.7	-4.0	.000
Monida	79.5	28	-2.1	-1.6	.127
Killdeer	78.5	25	-2.1	-1.7	.106
CDC Pacer	71.9	16	-3.6	-1.5	.143
Maverick	81.3	28	-.3	-.3	.785
CDC Dancer	72.3	17	-5.3	-3.4	.004

THE MEAN FOR THE REFERENCE VARIETY (Monico) IS: 81.6 (N= 28)

* **P-VALUE-** Denotes level of significance between check variety (Monico) and variety in question. P-value of .01 = 99/100 probability of means being different from check due to random chance. Only comparison between Monico and other varieties are valid, cannot compare other varieties to each other.

1999-2005 SPRING OAT VARIETY PERFORMANCE
All Locations ⁽¹⁾
Overall Agronomic Summary

Pedigree	# Yrs	Yield (bu/ac)	# Yrs	Test Wt (lb/bu)	# Yrs	Heading Date	# Yrs	Plant Ht. inches	# Yrs	Protein %
Monico *	54	133.4	54	35.8	51	177.3	52	33.3	43	13.3
Otana *	54	122.8	54	35.8	51	178.3	52	38.8	43	14.4
Monida *	54	126.9	54	33.1	51	180.8	52	35.7	43	13.4
Killdeer	49	127.2	49	35.5	46	176.1	47	33.5	39	13.7
CDC Pacer	30	126.8	30	34.9	27	178.2	28	37.1	24	12.9
Maverick *	54	131.8	54	33.5	51	178.9	52	29.5	43	13.6
CDC Dancer	33	124.2	33	36.9	30	177.9	31	38.1	26	13.5

⁽¹⁾ **Irrigated Locations:** Sidney, Huntley, Bozeman, Kalispell (High Moisture)
Dryland Locations: Havre, Sidney, Moccasin, Huntley

1999-2005 Spring Oat T-Paired Comparison vs Monico Yield (bu/ac)

NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE*
Otana	122.8	54	-10.6	-4.3	.000
Monida	126.9	54	-6.5	-3.2	.002
Killdeer	126.4	49	-6.5	-3.0	.004
CDC Pacer	117.6	30	-7.0	-2.0	.057
Maverick	131.8	54	-1.7	-.9	.399
CDC Dancer	119.9	33	-9.7	-3.6	.001

THE MEAN FOR THE REFERENCE VARIETY (Monico) IS: 133.4 (N= 54)

* **P-VALUE**- Denotes level of significance between check variety (Monico) and variety in question. P-value of .01 = 99/100 probability of means being different from check due to random chance. Only comparison between Monico and other varieties are valid, cannot compare other varieties to each other.

CROP GROWTH INFORMATION FOR 2005 OAT INTRASTATE NURSERIES

	KALISPELL	BOZEMAN	HUNTLEY	HUNTLEY
	HIGH MOISTURE	IRR	DRY	Irr
	District 1	District 2	District 3	District 3

Location:

Latitude, N.	48 10'	45 41'	45 55'	45 55'
Longitude, W.	114 15'	111 00'	108 15'	108 15'
Elevation, (FT)	2982	4772	3200	3200

Precipitation:

Average moisture, (IN) (1)	20.21	15.93	13.18	13.18
2005 moisture (IN)	21.88	14.40	10.97	10.97
Moisture Apr-July-2005	12.64	7.55	6.17	6.17
Moisture Apr-July-Avg.	9.07	8.24	6.93	6.93

Soil Moisture:

Avail. water depth (IN)	NA	36	NA	NA
Water applied, (IN)	none	3.5	none	June 26

Previous Crop:

2002	Alfalfa	Fallow	ChmFallow	Soybeans
2003	Alfalfa	Oats	ChmFallow	Soybeans
2004	Alfalfa	Fallow	ChmFallow	Soybeans

Soil Type:

Series	Creston	Amsterdam	Fort Collins	NA
Texture 2	SiL	SiL	SL	NA

Fertilization:

Available N/P/K	NA	197/24/303	NA	NA
Applied N-P-K(lb/ac)	80/28/120/24	none	11/52/00	110/67/0

Planting Date	4/16/05	5/5/05	3/16/05	3/28/05
Harvest Date	8/29/05	8/22/05	8/25/05	8/17/05

1> Moisture September-August

2> C = clay, L = loam, Sa = sand, Si = silt or silty, F = fine, VF = very fine.

CROP GROWTH INFORMATION FOR 2005 OAT INTRASTATE NURSERY (Continued)

	MOCCASIN DRY District 4	HAVRE DRY District 5	SIDNEY DRY District 6	SIDNEY IRR District 6
Location:				
Latitude, N.	47 03'	48 30'	47 40'	47 40'
Longitude, W.	109 57'	109 48'	104 08'	104 08'
Elevation, (FT)	4300	2689	2200	1950
Precipitation:				
Average moisture, (IN) (1)	15.34	12.20	13.81	13.81
2005 moisture (IN)	12.14	11.90	11.82	13.43
Moisture Apr-July-2005	6.81	7.37	8.25	9.99
Moisture Apr-July-Avg.	8.58	6.97	8.03	8.03
Soil Moisture:				
Avail. water depth (IN)	NA	8.07"aw	NA	NA
Water applied, (IN)	none	none	none	June 11
Previous Crop:				
2002	Mustard	NTFallow	small grains	Potatoes
2003	Barley	Wheat	safflower	Safflower
2004	Fallow	NTFallow	fallow	Onions
Soil Type:				
Series	Judith-/Danvers	Kevin	Williams	Savage
Texture 2	CL	CL	CL	SiCL
Fertilization:				
Available N/P/K	--	184/34/391/13	65/35/0	20/28/
Applied N-P-K(lb/ac)	40/10/10/5	70/40/25	none	80/0/0
Planting Date	4/13/05	4/23/05	4/13/05	4/20/05
Harvest Date	8/11/05	8/16/05	7/29/05	8/9/05

1> Moisture September-August

2> C = clay, L = loam, Sa = sand, Si = silt or silty, F = fine, VF = very fine.

September 2004 to August 2005 and long term average monthly precipitation for the Montana Agricultural Research Centers.

Locality Years	Sept '04	Oct '04	Nov '04	Dec '04	Jan '05	Feb '05	Mar '05	Apr '05	May '05	June '05	July '05	Aug '05	Total
Kalispell 2005	1.89	1.62	0.81	1.49	1.38	0.01	1.41	2.21	1.94	8.44	0.26	0.60	21.88
Kalispell (1949-2005)	1.65	1.28	1.60	1.49	1.33	1.15	1.41	1.83	2.40	3.16	1.68	1.23	20.21
Bozeman 2005	1.67	1.60	0.18	0.18	0.20	0.29	0.99	2.30	1.16	3.02	1.07	1.74	14.40
Bozeman (1958-2005)	1.50	1.34	0.89	0.56	0.56	0.51	1.05	1.57	2.60	1.69	1.38	1.28	15.93
Huntley 2005	1.56	1.77	0.04	0.22	0.32	0.10	0.89	4.03	3.25	2.44	1.40	0.54	16.56
Huntley (1911-2005)	1.29	1.02	0.62	0.59	0.55	0.46	0.79	1.32	2.08	2.38	1.14	0.93	13.15
Moccasin 2005	0.75	1.12	0.06	0.41	0.23	0.07	0.90	1.59	1.52	3.10	0.60	1.79	12.14
Moccasin (1909-2005)	1.41	0.87	0.56	0.56	0.57	0.45	0.73	1.18	2.51	3.17	1.72	1.61	15.34
Havre 2005	1.51	0.71	0.16	0.18	0.19	0.01	0.89	0.66	0.98	5.16	0.57	0.88	11.90
Havre (1916-2005)	1.16	0.66	0.42	0.45	0.44	0.32	0.56	0.97	1.78	2.65	1.57	1.22	12.20
Sidney Irrigated 2005	1.17	1.44	0.01	0.54	0.42	0.00	0.86	0.00	3.29	4.35	1.55	0.85	14.48
Sidney Dryland 2005	1.19	0.92	0.01	0.54	0.42	0.00	0.83	0.04	3.01	3.81	1.39	0.76	12.85
Sidney Irrigated 1958-2005)	1.28	0.88	0.49	0.43	0.42	0.35	0.53	1.08	1.98	2.87	2.10	1.42	13.81

September 2004 to August 2005 and long term average monthly temperatures for the Montana Agricultural Research Centers.

Locality Years	Sept '04	Oct '04	Nov '04	Dec '04	Jan '05	Feb '05	Mar '05	Apr '05	May '05	June '05	July '05	Aug '05	Ave
Kalispell 2005	52.3	43.4	33.8	29.4	20.6	30.6	36.1	43.9	51.8	55.3	62.6	62.8	43.6
Kalispell (1949-2005)	53.6	42.2	32.4	24.3	24.5	27.2	35.0	43.4	51.5	57.6	63.8	63.4	43.3
Bozeman 2005	55.4	46.6	34.2	20.2	24.0	31.4	37.2	43.7	48.9	53.8	67.6	66.3	44.1
Bozeman (1958-2005)	55.3	45.2	31.4	23.6	22.1	27.0	33.3	42.4	51.2	58.7	65.4	64.6	43.4
Huntley 2005	57.6	46.7	37.3	31.3	17.9	33.0	38.8	45.4	52.1	62.5	71.3	67.1	46.8
Huntley (1911-2005)	57.8	46.8	33.4	24.0	20.4	25.7	33.8	45.4	54.9	63.3	70.6	68.7	45.5
Moccasin 2005	54.4	44.7	37.3	30.5	21.5	31.3	34.0	42.1	48.4	57.4	67.8	64.5	44.5
Moccasin (1909-2005)	54.6	44.8	32.7	25.0	21.2	24.6	30.1	40.8	50.1	57.9	65.6	64.7	42.7
Havre 2005	57.4	43.3	34.8	27.9	12.0	29.7	35.2	46.7	52.5	61.7	71.2	67.2	45.0
Havre (1916-2005)	56.7	46.3	30.2	19.9	15.3	20.2	30.2	44.1	54.7	62.5	70.7	68.8	43.3
Sidney Irrigated 2005	61.2	46.8	35.9	26.0	10.5	29.1	35.8	51.7	54.4	66.5	73.3	69.8	46.8
Sidney Irrigated (1958-2005) 2006	57.6	45.9	29.8	18.2	12.0	19.9	30.0	44.5	56.0	64.4	69.7	68.6	43.1

AGRONOMIC AND SEED CHARACTERISTICS FOR SPRING OAT VARIETIES IN MONTANA

Variety	Released by	Year Released	Grain Color	Plant Height	Maturity	Yellow Dwarf Virus	Stem Rust	Crown Rust	P.V.P. Status**
Ajay	Idaho	1991	White	Short	Medium	-	-	-	No
CDC Dancer	Canada	2000	White	Tall	Medium	S	S	S	Yes (Canada)
CDC Pacer	Canada	1996	White	Tall	Medium	S	S	S	No
Killdeer	North Dakota	2000	White	Medium	Medium	MT	R	MS	No
Maverick	Idaho-Montana-Colorado	2003	White	Short	Medium	-	-	-	No
Monico	Idaho-Montana-Colorado	2003	White	Medium	Early	-	-	S	No
Monida	Idaho-Montana	1984	White	M-Tall	Medium	-	S	S	No
Otana	Montana-Idaho	1976	White	Tall	Medium	S	S	-	No
Rio Grande	Idaho	1998	Yellow	Medium	Early	-	-	-	No

*M = Moderate, R = Resistant, S = Susceptible, T = Tolerant

** Variety registration status under U. S. Plant Variety Protection Act.

ADDITIONAL DESCRIPTIVE INFORMATION FOR OAT VARIETIES

AJAY - Developed from the cross of 74Ab1952/74Ab2608 by the Idaho Agricultural Experiment Station, at Aberdeen, in cooperation with the Crops Research Division, USDA. Ajay was released in 1991. Ajay is a short, mid-season maturing variety with shattering resistance. Ajay is better suited to irrigated conditions where lodging is a concern. Kernel appearance is satisfactory but not as bright as Otana and Monida.

CELSIA - Celsia was developed by Cebeco Zaden B. V. in the Netherlands from the cross Cebeco 7801/ Cebeco 7802 made in 1978. Seed is distributed by Western Plant Breeders in the U. S. Celsia is a white oat whose lemmas are generally awnless but up to 10 percent of the lemmas on the primary floret may have a short black awn.

CDC DANCER - CDC Dancer is a white oat developed by Crop Development Center in Alberta, Canada and registered for sale in Canada in 2000. CDC Dancer is taller and heads approximately one day later than Monico. It yielded less than Monico but had higher test weight over all locations.

CDC PACER - CDC Pacer is a white oat developed by Crop Development Center in Alberta, Canada and registered for sale in Canada in 1996. CDC Pacer was derived from the cross W84425 x OT751 made in 1986. CDC Pacer is fully susceptible to both stem and crown rust and is relatively susceptible to BYDV. It has better smut resistance than Calibre and Derby. CDC Pacer had lower yields and test weights than Monico over all locations. It is taller and heads one day later than Monico.

KILLDEER - Developed by North Dakota State University and released in 2000. Killdeer is a white oat that is medium in plant height and similar in maturity to Rio Grande. It yields less than Monico but has test weights and plant heights similar to Monico. Killdeer heads approximately one day earlier than Monico.

MAVERICK - Developed from a cross of 80Ab988 (PI578241)/'Monica' utilizing a modified bulk selection program by USDA-ARS at Aberdeen Idaho. Maverick is a midseason short spring oat with high yields. Juvenile plant growth is erect and immature foliage is blue-green in color. Panicles are equilateral and spreading. Leaf sheath, leaf margins, and culm internodes are glabrous. Kernels of Maverick are typically short to mid-long, plump and white to light cream in color similar to Ajay. Maverick is a short, high yielding oat adapted to irrigated and high moisture locations.

ADDITIONAL DESCRIPTIVE INFORMATION FOR OAT VARIETIES (continued)

MONICO Monico is a selection from the cross 83Ab3119/ Monida utilizing a modified bulk selection program. Monico is an early to midseason, relatively tall spring oat with good yield potential and excellent test weight. Juvenile plant growth is erect and immature foliage is blue-green in color. Panicles are equilateral and spreading. Leaf sheath, leaf margins, and culm internodes are glabrous. Kernels of Monico are typically plump, mid-long, creamy-white cream and similar to those of Otana, Cayuse, and Monida. Monico has yields similar to Maverick and Monida with a test weight equal to Otana.

MONIDA - Developed from the cross of 'Otana'/'Cayuse' and released in 1984 cooperatively by the Agricultural Research Service, USDA, Idaho, Oregon, Washington and Montana Agricultural Experiment Station. The kernels are creamy-white in color and similar to Otana. Monida has produced high yields in Montana trials. It is superior to Cayuse and Border in test weight and somewhat less than Otana. Monida is susceptible to crown rust and prevalent races of stem rust.

OTANA - Developed from a cross of CI5345/'Zanster' by the Agricultural Research Service, Idaho and jointly released with the Montana Agricultural Experiment Stations in 1976. It is a relatively tall oat with dark or blue green foliage. Otana has lower yields, similar test weight, heads approximately one day later, and is taller than Monico. Otana has moderate resistance to lodging and produces plump, short, white kernels.

RIO GRANDE - Developed from the cross of 74Ab2608/'Cayuse' by the Idaho Agricultural Experiment Station, at Aberdeen, in cooperation with the Crops Research Division, USDA. Rio Grande is a sister selection of 'Monida' and was released in 1998. Rio Grande is a yellow-kerneled, medium height, and early maturing oat. Rio Grande yields higher than Otana and has test weights similar to Monida.

PLANT VARIETY PROTECTION (PVP)

The developer of a new distinct variety may obtain protection (essentially a patent) for that variety if he/she chooses to do so, provided the variety meets the requirements of the Plant Variety Protection Act of 1970. This Act permits the owner or developer of a variety to prohibit others from selling, sexually multiplying, using for propagation for seed, or using to produce a hybrid, seed of his variety.

Two options, for plant variety protection, are available to the developer of the variety. Under the first option, the developer of the variety or his/her agent may sell either certified or uncertified seed of the variety. If the developer of the variety has reason to believe that anyone is infringing on his/her rights, he/she may resort to civil action.

The other option ("certification option") for protecting a variety utilizes the provision of Title V of the Federal Seed Act. A variety protected in this manner may be sold by variety name only as a class of certified seed.

It is the responsibility of the seller to inform the buyer if the variety is protected. Each container of seed sold should be labeled with a tag indicating the type of protection which the owner has. Under the first option, the label will state: "Unauthorized Propagation Prohibited - U.S. Protected Variety."

If the owner of the variety has chosen the other option for variety protection, the label will state, "Unauthorized Propagation Prohibited - To be Sold by Variety Name Only as a Class of Certified Seed - U.S. Protected Variety."

PLEASE NOTE: Varieties protected under the 1994 PVP act no longer can be sold without permission of the variety owner (the farmer exemption has been excluded)'

A complete listing of all protected varieties is available in the "Official Journal of the Plant Variety Protection Office" which may be obtained upon request from:

**Plant Variety Protection Office
Warehouse Division, AMS
U.S. Dept. of Agriculture
National Agricultural Library
Beltsville, MD 20705**

Phone: (301) 504-5518

Internet: <http://www/ams.usda.gov/science/pvpo/pvpindex.htm>

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