

2005 VARIETAL RECOMMENDATION

ALZADA

WestBred, LLC requests that you consider the variety ‘Alzada’ spring durum for “Variety Recommendation in the State of Montana”.

A motion that Alzada be recommended as spring durum wheat for irrigated and dryland production in districts 2, 3, 4, 5, and 6 of Montana.

Pedigree = “Alzada” is a spring durum wheat developed by WestBred, LLC from the cross ‘Mohawk/Kofa’. Alzada was tested extensively in WestBred, LLC trials in Arizona and in irrigated and dryland WestBred, LLC Pacific Northwest locations prior to testing in the MSU intrastate trials.

For the period 2001-2004 (Table 1), Alzada yielded 47.7 bushels over the 32 locations in MSU’s Intrastate Trials., which was third behind Mountrail at 49.1 bu/ac and AC Avonlea at 47.8 bu/ac. Alzada had an average test weight of 59.9 lbs/bu, which was slightly lower than the average for the 32 locations. The average plant height of Alzada was 26.5 inches, the shortest variety in the 4 year comparison. The average heading date of Alzada was June 25th, which was two days earlier than the average. The protein percent of Alzada was slightly below average, but the quality of the protein and the color of the semolina make Alzada a superior durum variety for pasta production (Table 2)

Table 1. Summary of Alzada compared to check varieties in MSU’s 2001-2004 Intrastate Durum Yield Trial (32 locations).

VARIETY	Yield bu/ac	Test Wt lbs/bu	Heading Date Julian	Plant Ht. inches	Gr. Protein %
ALZADA	47.74	59.9	176	26.5	14.7
VIC	42.43	60.7	178	33.2	15.1
CHECK AVE	42.43	60.7	178	33.2	15.1
MONROE	41.73	59.9	176	31.8	15.2
KYLE	43.92	60.4	181	35.3	15.1
Munich	47.44	59.7	178	28.9	15.2
BEN	45.35	61.0	178	32.0	15.1
MOUNTRAIL	49.12	59.9	179	30.6	14.8
MAIER	47.44	60.6	179	29.9	15.4
PLAZA	46.70	59.9	180	26.6	14.8
LEB SOCK	45.82	61.1	178	30.2	14.7
AC AVONLEA	47.78	60.6	178	31.8	15.5
AVERAGE	45.95	60.3	178	30.6	15.1

Table 2. Quality scores of Alzada compared to check varieties in MSU' 2001-2003 Intrastate Durum Trials.

Alzada Quality Score from NDSU Quality Lab

2003			
Cultivar	Average Score	Ranking	rank
Alzada	26.2	high	1
Monroe	12.2		2
Vic	9.9	hgh medium	3
Laker	9.9		4
Ben	9.0	medium high	5
Utopia	8.6		6
AC Avonlea	8.3		7
Maier	7.5	medium	8
Dilse	6.6		9
Pierce	5.6		10
Lebsock	4.4		11
Plaza	3.8	medium low	12
Mountrail	3.5		13
Munich	3.4		14
Renville	3.1	low medium	15
Kyle	2.9		16
McNeal	1.7	low	17

2002			
Cultivar	Average Score	Ranking	rank
ALZADA	32.6	high	1
MAIER	19.5		2
BEN	18.2		3
MONROE	17.4		4
WPB LAKER	17.4		5
UTOPIA	15.1	medium	6
VIC	14.8		7
Acavonlea	14.1		8
MEDORA	12.2		9
LEB SOCK	9.8		10
MOUNTRAIL	9.3		11
RENVILLE	9.2	low	12
KYLE	8.7		13
MUNICH	8.6		14
MCNEAL	8.2		15
PLAZA	6.5		16

2001			
Cultivar	Average Score	Ranking	rank
ALZADA	64.7	high	1
ACAVONLEA	32.3		2
MONROE	32.1		3
MAIER	30.5		4
LAKER	29.9		5
VIC	29.5		6
BEN	28.9	medium	7
MEDORA	26.8		8
LEB SOCK	22.1		9
PLAZA	21.8		10
UTOPIA	21.6		11
KYLE	18.0	low	12
MUNICH	15.9		13
MOUNTRAIL	15.3		14
RENVILLE	12.9		15
MCNEAL	12.6		16

Table 3. Yield of Alzada compared to check varieties in MSU' 2001-2004 Intrastate Durum Trials.

GRAIN YIELD (BU/AC)

VARIETY	DISTRICT 2 BOZEMAN DRYLAND						DISTRICT 3 HUNTLEY DRYLAND						DISTRICT 4 MOCCASIN FALLOW				MOCCASIN NO-TILL				DISTRICT 5 HAVRE DRYLAND					
	2001(IRR)	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2003	YRS	AVE	2001	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE
ALZADA	76.4	59.1	42.2	74.0	4	62.9	33.5	15.1	34.3	29.3	4	28.0	35.5	13.8	2	24.7	30.0	27.7	2	28.8	18.9	39.2	9.1	47.7	4	28.7
VIC	76.3	52.2	42.5	52.1	4	55.8	31.9	8.5	28.9	27.7	4	24.3	29.5	12.5	2	21.0	29.5	22.3	2	25.9	19.1	35.3	10.9	35.7	4	25.2
CHECK AVE	76.3	52.2	42.5	52.1	4	55.8	31.9	8.5	28.9	27.7	4	24.3	29.5	12.5	2	21.0	29.5	22.3	2	25.9	19.1	35.3	10.9	35.7	4	25.2
MONROE	71.9	52.6	42.5	58.2	4	56.3	31.1	14.7	31.8	26.9	4	26.1	29.2	15.0	2	22.1	28.1	26.8	2	27.5	16.9	33.7	7.1	43.4	4	25.3
KYLE	74.4	47.9	39.6	54.5	4	54.1	34.5	4.9	34.7	32.3	4	26.6	30.7	15.1	2	22.9	29.5	23.1	2	26.3	20.5	36.7	12.5	49.9	4	29.9
Munich	79.3	60.1	41.8	58.1	4	59.8	34.3	10.5	32.6	29.9	4	26.8	30.5	12.3	2	21.4	26.4	26.8	2	26.6	17.0	38.7	10.6	40.4	4	26.7
BEN	79.9	56.2	41.8	59.2	4	59.3	29.4	11.0	28.7	31.1	4	25.0	28.7	13.9	2	21.3	29.4	23.0	2	26.2	15.8	35.9	8.4	41.3	4	25.3
MOUNTRAIL	83.8	60.4	41.9	61.8	4	62.0	33.6	6.6	30.3	32.7	4	25.8	32.3	18.8	2	25.6	27.4	26.2	2	26.8	18.9	39.5	11.6	44.3	4	28.6
MAIER	81.2	62.7	41.5	61.1	4	61.6	29.9	11.2	30.2	32.7	4	26.0	29.8	12.8	2	21.3	28.9	26.2	2	27.5	15.7	39.0	10.0	43.5	4	27.0
PLAZA	73.6	58.9	34.1	63.7	4	57.6	32.2	8.2	30.4	31.0	4	25.4	29.5	11.6	2	20.6	24.9	24.0	2	24.5	19.1	38.0	12.4	41.8	4	27.8
LEBSOCK	76.6	61.7	41.2	62.5	4	60.5	29.0	9.3	35.0	29.8	4	25.8	29.6	12.1	2	20.9	30.2	24.2	2	27.2	16.3	35.2	10.5	46.7	4	27.2
AC AVONLEA	76.4	59.7	40.6	62.5	4	59.8	34.8	10.6	32.2	28.8	4	26.6	33.9	14.8	2	24.3	28.8	29.0	2	28.9	21.4	40.3	8.1	44.7	4	28.6
AVERAGE	77.3	57.4	40.9	60.7	4	59.1	32.2	10.1	31.7	30.2	4	26.0	30.8	13.9	2	22.4	28.5	25.4	2	26.9	18.1	37.4	10.1	43.6	4	27.3

VARIETY	DISTRICT 5 CONRAD DRYLAND						CONRAD IRRIGATED						DISTRICT 6 SIDNEY DRYLAND				SIDNEY IRRIGATED				OVERALL TOTAL						
	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	AVG	YEARS	RANK
ALZADA	15.6	44.6	42.2	64.6	4	41.7	49.0	93.6	82.1	91.2	4	79.0	31.5	42.2	54.7	54.3	4	45.7	46.4	64.9	100.6	64.6	4	69.1	47.74	32	3
VIC	12.8	37.7	30.6	52.5	4	33.4	37.8	71.5	64.5	80.1	4	63.5	41.8	35.5	50.4	48.8	4	44.1	49.8	66.6	109.3	53.3	4	69.7	42.43	32	10
CHECK AVE	12.8	37.7	30.6	52.5	4	33.4	37.8	71.5	64.5	80.1	4	63.5	41.8	35.5	50.4	48.8	4	44.1	49.8	66.6	109.3	53.3	4	69.7	42.43	32	0
MONROE	12.3	37.6	34.5	53.8	4	34.5	40.6	65.1	63.2	51.8	4	55.2	35.8	34.6	49.3	52.7	4	43.1	54.8	66.0	100.0	53.4	4	68.6	41.73	32	11
KYLE	14.4	51.0	33.1	57.1	4	38.9	45.2	79.1	57.0	84.9	4	66.6	53.8	37.8	51.0	54.8	4	49.4	29.0	65.7	89.3	61.5	4	61.4	43.92	32	9
Munich	11.5	44.4	38.3	59.4	4	38.4	50.1	92.6	73.8	97.3	4	78.4	49.1	34.7	49.8	58.9	4	48.1	54.0	67.8	123.0	64.1	4	77.2	47.44	32	5
BEN	12.1	40.6	35.6	54.5	4	35.7	43.6	72.8	73.3	84.4	4	68.5	48.0	35.4	52.3	53.7	4	47.3	58.4	66.2	112.3	74.7	4	77.9	45.35	32	8
MOUNTRAIL	15.0	49.5	39.2	61.8	4	41.4	47.4	88.9	83.8	98.5	4	79.6	58.2	36.9	53.9	54.2	4	50.8	56.3	70.5	125.3	62.4	4	78.6	49.12	32	1
MAIER	12.7	43.6	46.0	57.8	4	40.0	45.3	85.4	79.2	91.8	4	75.4	45.6	37.3	55.2	59.4	4	49.4	56.3	72.1	117.6	56.9	4	75.7	47.44	32	4
PLAZA	13.8	43.4	39.1	60.7	4	39.2	44.1	100.5	65.8	101.8	4	78.0	50.8	36.8	51.4	56.3	4	48.8	57.7	64.4	118.4	56.1	4	74.1	46.7	32	6
LEBSOCK	13.1	42.6	33.6	57.4	4	36.7	42.3	83.3	72.8	90.7	4	72.3	50.5	38.2	53.3	50.9	4	48.2	53.2	62.1	112.5	60.1	4	72.0	45.82	32	7
AC AVONLEA	16.1	47.8	42.5	62.3	4	42.2	48.1	91.5	76.5	95.1	4	77.8	50.4	34.5	53.8	61.9	4	50.1	48.2	60.8	106.0	66.7	4	70.4	47.78	32	2
AVERAGE	13.6	43.9	37.7	58.3	4	38.4	44.9	84.0	72.0	87.9	4	72.2	46.9	36.7	52.3	55.1	4	47.7	51.3	66.1	110.4	61.2	4	72.3	45.95	32	0

Table 4. Test weight of Alzada compared to check varieties in MSU' 2001-2004 Intrastate Durum Trials.

TEST WEIGHT (LB/BU)

VARIETY	DISTRICT 2 BOZEMAN DRYLAND						DISTRICT 3 HUNTLEY DRYLAND						DISTRICT 4 MOCCASIN FALLOW				DISTRICT 4 MOCCASIN NO-TILL				DISTRICT 5 HAVRE DRYLAND					
	2001(IRR)	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2003	YRS	AVE	2001	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE
ALZADA	61.1	59.2	58.3	58.8	4	59.4	59.6	51.6	60.7	61.4	4	58.3	61.6	58.1	2	59.9	57.1	54.8	2	56.0	60.9	61.4	58.1	58.8	4	59.8
VIC	62.2	61.3	59.4	60.1	4	60.8	60.4	47.4	61.4	62.4	4	57.9	62.6	57.6	2	60.1	59.7	57.0	2	58.4	60.2	62.2	58.1	61.5	4	60.5
CHECK AVE	62.2	61.3	59.4	60.1	4	60.8	60.4	47.4	61.4	62.4	4	57.9	62.6	57.6	2	60.1	59.7	57.0	2	58.4	60.2	62.2	58.1	61.5	4	60.5
MONROE	61.5	60.2	57.3	59.4	4	59.6	59.6	51.9	61.2	61.6	4	58.6	59.2	57.3	2	58.3	58.2	56.0	2	57.1	59.2	61.0	56.7	59.8	4	59.2
KYLE	60.9	59.9	58.4	58.9	4	59.5	62.2	49.3	60.8	62.2	4	58.6	63.2	58.0	2	60.6	58.8	56.0	2	57.4	61.7	62.9	57.7	59.7	4	60.5
Munich	60.8	61	57.6	58.8	4	59.6	59.7	50.8	60.9	61.2	4	58.2	60.9	55.7	2	58.3	57.0	55.2	2	56.1	59.6	60.4	55.4	59.4	4	58.7
BEN	61.8	62	59.1	60	4	60.7	60.6	52.9	61.0	62.2	4	59.2	63.0	57.4	2	60.2	59.5	56.1	2	57.8	60.6	62.3	57.5	60.8	4	60.3
MOUNTRAIL	60.9	60.5	58	58.4	4	59.5	61.5	48.4	59.5	61.7	4	57.8	62.8	56.1	2	59.4	55.6	54.3	2	55.0	60.1	61.7	56.7	59.2	4	59.4
MAIER	60.7	61.6	57.3	58.3	4	59.5	61.1	52.2	61.0	61.9	4	59.1	63.7	56.0	2	59.9	57.8	56.1	2	57.0	60.8	62.1	56.6	60.0	4	59.9
PLAZA	60.1	60.3	57	59.1	4	59.1	61.2	47.9	59.8	60.9	4	57.4	62.3	56.1	2	59.2	58.4	55.2	2	56.8	61.5	62.0	57.1	59.7	4	60.1
LEB SOCK	62.2	61.5	58.6	59.6	4	60.5	61.1	51.5	61.7	62.3	4	59.1	63.7	58.5	2	61.1	59.9	57.0	2	58.4	61.2	62.3	58.2	61.4	4	60.8
AC AVONLEA	61.1	61	57.8	60.2	4	60	62.0	51.6	59.9	62.2	4	58.9	64.0	58.5	2	61.3	58.1	56.7	2	57.4	61.2	62.8	56.8	60.2	4	60.2
AVERAGE	61.21	60.77	58.07	59.24	4	59.8	60.8	50.5	60.7	61.8	4	58.5	62.5	57.2	2	59.8	58.2	55.9	2	57.0	60.6	61.9	57.2	60.0	4	59.9

VARIETY	DISTRICT 5 CONRAD DRYLAND						DISTRICT 5 CONRAD IRRIGATED						DISTRICT 6 SIDNEY DRYLAND				DISTRICT 6 SIDNEY IRRIGATED				OVERALL TOTAL						
	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	AVG	YEARS	RANK
ALZADA	60.1	61.8	55.8	63.1	4	60.2	64.8	63.6	61.8	64.1	4	63.6	59.1	58.7	61.8	60.7	4	60.1	55.2	61.5	62.8	61.7	4	60.3	59.9	32	7
VIC	60.8	61.6	56.6	63.6	4	60.7	64.3	63.2	60.8	63.8	4	63.0	62.0	59.3	63.7	61.0	4	61.5	58.0	63.7	63.7	62.3	4	61.9	60.7	32	3
CHECK AVE	60.8	61.6	56.6	63.6	4	60.7	64.3	63.2	60.8	63.8	4	63.0	62.0	59.3	63.7	61.0	4	61.5	58.0	63.7	63.7	62.3	4	61.9	60.7	32	0
MONROE	59.9	61.5	55.5	63.5	4	60.1	63.5	62.4	62.6	62.6	4	62.8	59.6	58.3	62.0	60.8	4	60.2	58.5	62.0	63.2	61.8	4	61.4	59.9	32	8
KYLE	61.3	62.5	55.1	62.8	4	60.4	64.1	62.2	59.3	63.9	4	62.4	62.0	60.2	62.0	61.3	4	61.4	57.2	63.2	62.7	62.2	4	61.3	60.4	32	6
Munich	59.4	60.5	56.5	63.1	4	59.9	63.8	62.8	60.1	63.2	4	62.5	60.7	57.3	62.3	60.3	4	60.2	57.5	62.0	63.2	62.3	4	61.3	59.7	32	11
BEN	60.6	62.2	57.9	64.1	4	61.2	64.3	63.3	62.5	63.6	4	63.4	62.0	59.3	63.7	61.2	4	61.5	60.0	63.7	64.3	63.5	4	62.9	61.0	32	2
MOUNTRAIL	59.5	62.2	55.6	63.0	4	60.1	63.5	63.4	59.9	63.9	4	62.7	61.2	57.7	61.8	60.8	4	60.4	59.2	62.8	63.8	61.7	4	61.9	59.9	32	10
MAIER	60.5	61.9	58.1	63.8	4	61.1	64.8	63.6	61.8	64.6	4	63.7	61.5	59.7	62.8	61.2	4	61.3	58.5	63.5	64.2	62.3	4	62.1	60.6	32	4
PLAZA	60.6	61.2	55.2	62.6	4	59.9	64.6	63.6	59.0	64.3	4	62.9	60.8	57.8	61.0	60.7	4	60.1	59.7	62.0	63.0	62.3	4	61.8	59.9	32	9
LEB SOCK	62.0	62.2	56.5	64.1	4	61.2	65.0	63.4	60.5	63.9	4	63.2	62.3	60.0	63.2	61.0	4	61.6	60.0	64.0	64.0	62.5	4	62.6	61.1	32	1
AC AVONLEA	60.1	61.6	56.4	63.3	4	60.4	64.5	62.6	61.2	64.2	4	63.1	61.4	58.7	62.3	61.2	4	60.9	58.7	61.7	63.0	62.7	4	61.5	60.6	32	5
AVERAGE	60.4	61.8	56.3	63.4	4	60.5	64.3	63.1	60.9	63.8	4	63.0	61.2	58.8	62.4	60.9	4	60.8	58.4	62.7	63.4	62.3	4	61.7	60.3	32	0

Table 5. Heading date of Alzada compared to check varieties in MSU' 2001-2004 Intrastate Durum Trials.

HEADING DATE (JULIAN DAYS; 178=JUNE 2

VARIETY	DISTRICT 2 BOZEMAN DRYLAND						DISTRICT 3 HUNTLEY DRYLAND						DISTRICT 4 MOCCASIN FALLOW				MOCCASIN NO-TILL			DISTRICT 5 HAVRE DRYLAND					
	2001(IRR)	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2003	YRS	AVE	2001	YRS	AVE	2001	2002	2003	2004	YRS	AVE
ALZADA	171	183	183	180	4	179	158	172	164	159	4	163	185	180	3	180	176	1	176	175	188	177	181	4	180
VIC	174	185	184	182	4	181	160	175	166	158	4	165	188	182	3	182	176	1	176	177	189	181	183	4	182
CHECK AVE	174	185	184	182	4	181	160	175	166	158	4	165	188	182	3	182	176	1	176	177	189	181	183	4	182
MONROE	172	184	182	179	4	179	158	170	162	157	4	162	184	178	3	179	174	1	174	173	187	176	180	4	179
KYLE	175	186	186	187	4	184	164	176	167	160	4	167	190	184	3	186	179	1	179	179	189	182	185	4	184
Munich	173	185	184	182	4	181	160	175	166	159	4	165	187	181	3	182	177	1	177	177	188	181	183	4	182
BEN	173	185	184	182	4	181	160	175	166	159	4	165	187	182	3	182	176	1	176	177	189	179	181	4	182
MOUNTRAIL	175	186	185	185	4	183	162	176	167	160	4	166	188	183	3	184	177	1	177	178	189	180	184	4	183
MAIER	175	185	185	184	4	182	160	173	166	158	4	165	188	182	3	183	176	1	176	177	189	181	183	4	183
PLAZA	176	186	188	184	4	184	161	175	168	159	4	166	188	183	3	184	178	1	178	178	189	181	184	4	183
LEBSOCK	175	183	183	182	4	181	160	175	166	157	4	165	187	182	3	182	176	1	176	177	188	181	182	4	182
AC AVONLEA	175	185	184	183	4	182	161	174	165	159	4	165	187	180	3	181	175	1	175	178	188	179	182	4	182
AVERAGE	174	184.82	184.36	182.73	4	181	160	174	166	159	4	165	187	182	3	182	176	1	176	177	188	180	182	4	182

VARIETY	DISTRICT 5 CONRAD DRYLAND						CONRAD IRRIGATED						DISTRICT 6 SIDNEY DRYLAND						SIDNEY IRRIGATED						OVERALL TOTAL		
	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	AVG	YEARS	RANK
ALZADA	174	183	180	183	4	180	173	185	179	182	4	180	172	179	167	168	4	172	179	181	172	176	4	177	176	32	10
VIC	174	186	182	184	4	182	177	186	182	184	4	182	174	181	169	173	4	174	181	184	176	179	4	180	178	32	6
CHECK AVE	174	186	182	184	4	182	177	186	182	184	4	182	174	181	169	173	4	174	181	184	176	179	4	180	178	32	0
MONROE	173	183	179	182	4	179	173	184	180	180	4	179	171	179	167	170	4	172	179	182	172	174	4	177	176	32	11
KYLE	178	187	186	186	4	184	180	186	185	186	4	184	177	183	171	176	4	177	185	186	180	183	4	184	181	32	1
Munich	175	185	181	184	4	181	174	184	183	184	4	181	174	181	168	172	4	174	182	183	174	177	4	179	178	32	9
BEN	175	185	183	185	4	182	176	185	183	184	4	182	175	181	169	173	4	174	182	184	177	179	4	180	178	32	5
MOUNTRAIL	175	187	183	186	4	183	176	185	184	185	4	183	175	181	170	174	4	175	183	185	177	180	4	181	179	32	3
MAIER	175	187	183	185	4	183	173	184	183	185	4	181	175	181	169	174	4	175	182	184	177	180	4	181	179	32	4
PLAZA	176	186	184	185	4	183	176	187	183	185	4	183	176	182	170	175	4	176	184	185	178	181	4	182	180	32	2
LEBSOCK	174	186	182	185	4	182	175	185	183	184	4	182	175	181	169	172	4	174	182	184	175	177	4	180	178	32	7
AC AVONLEA	174	186	181	185	4	182	174	185	181	183	4	181	175	180	169	172	4	174	182	184	175	179	4	180	178	32	8
AVERAGE	175	186	182	185	4	182	175	185	182	184	4	182	174	181	169	173	4	174	182	184	176	179	4	180	178	32	0

Table 6. Plant height of Alzada compared to check varieties in MSU' 2001-2004 Intrastate Durum Trials.

PLANT HEIGHT (INCHES)

VARIETY	DISTRICT 2 BOZEMAN DRYLAND						DISTRICT 3 HUNTLEY DRYLAND						DISTRICT 4 MOCCASIN FALLOW					DISTRICT 4 MOCCASIN NO-TILL					DISTRICT 5 HAVRE DRYLAND					
	001(IRR	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	YRS	AVE	2001	YRS	AVE	2001	2002	2003	2004	YRS	AVE		
ALZADA	28.5	31.2	27.6	32.3	4	29.9	20.8	22.9	27.4	23.6	4	23.7	24.0	23.4	21.7	3	23.0	25.7	1	25.7	13.0	22.0	18.4	28.3	4	20.4		
VIC	37.6	44.0	35.6	45.3	4	40.6	25.7	25.3	34.1	26.0	4	27.8	30.0	26.3	26.7	3	27.6	32.3	1	32.3	15.4	26.9	21.5	35.4	4	24.8		
CHECK AVE	37.6	44.0	35.6	45.3	4	40.6	25.7	25.3	34.1	26.0	4	27.8	30.0	26.3	26.7	3	27.6	32.3	1	32.3	15.4	26.9	21.5	35.4	4	24.8		
MONROE	31.4	42.8	34.2	44.3	4	38.2	23.8	27.5	35.3	24.8	4	27.9	29.0	26.6	27.3	3	27.7	30.3	1	30.3	17.2	24.5	20.1	33.9	4	23.9		
KYLE	42.6	44.5	35.6	49.9	4	43.2	30.6	25.8	33.3	25.9	4	28.9	30.0	29.3	25.3	3	28.2	33.3	1	33.3	20.0	27.7	24.6	37.5	4	27.5		
Munich	30.7	38.6	31.5	40.9	4	35.4	21.1	22.6	31.3	22.7	4	24.4	26.0	23.5	22.0	3	23.8	28.0	1	28.0	14.2	23.7	19.3	30.6	4	21.9		
BEN	35.2	41.7	34.7	42.9	4	38.7	24.1	25.7	32.6	25.1	4	26.9	28.3	25.6	25.0	3	26.3	30.0	1	30.0	18.5	25.3	20.4	36.4	4	25.1		
MOUNTRAIL	34.5	39.6	31.9	42.4	4	37.1	24.1	22.3	29.5	23.9	4	24.9	28.0	24.0	23.0	3	25.0	28.0	1	28.0	15.2	24.3	20.5	34.0	4	23.5		
MAIER	32.4	38.9	32.7	39.8	4	35.9	23.0	24.0	29.8	25.3	4	25.5	27.3	24.7	22.0	3	24.7	29.3	1	29.3	16.4	25.2	19.9	32.4	4	23.5		
PLAZA	27.7	29.7	26.1	31.6	4	28.8	22.8	20.9	24.9	23.5	4	23.0	22.7	23.0	21.0	3	22.2	24.3	1	24.3	17.1	23.8	21.3	28.3	4	22.6		
LEB SOCK	32.2	39.5	32.2	41.2	4	36.3	21.4	25.1	30.4	22.8	4	24.9	27.7	25.9	23.0	3	25.5	28.3	1	28.3	16.1	23.6	20.1	31.7	4	22.9		
AC AVONLEA	35.0	41.8	34.1	43.6	4	38.6	27.8	24.8	30.8	25.9	4	27.3	29.0	26.5	25.3	3	27.0	31.0	1	31.0	17.7	26.0	19.0	35.7	4	24.6		
AVERAGE	33.4	39.3	32.4	41.3	4	36.6	24.1	24.3	30.9	24.5	4	25.9	27.5	25.3	23.9	3	25.5	29.2	1	29.2	16.4	24.8	20.5	33.1	4	23.7		

VARIETY	DISTRICT 5												DISTRICT 6												OVERALL TOTAL		
	CONRAD DRYLAND						CONRAD IRRIGATED						SIDNEY DRYLAND						SIDNEY IRRIGATED						AVG	YEARS	RANK
	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	2002	2003	2004	YRS	AVE			
ALZADA	20.0	27.0	32.0	34.0	4	28.3	23.0	31.0	37.0	34.0	4	31.3	22.3	23.5	27.6	26.8	4	25.0	28.7	25.9	34.0	30.3	4	29.7	26.5	32	11.0
VIC	21.0	31.0	40.0	39.0	4	32.8	32.0	38.0	43.0	44.0	4	39.3	30.7	29.5	35.3	34.8	4	32.6	40.0	35.2	47.6	33.2	4	39.0	33.2	32	2.0
CHECK AVE	21.0	31.0	40.0	39.0	4	32.8	32.0	38.0	43.0	44.0	4	39.3	30.7	29.5	35.3	34.8	4	32.6	40.0	35.2	47.6	33.2	4	39.0	33.2	32	0.0
MONROE	22.0	30.0	38.0	37.0	4	31.8	26.0	37.0	38.0	43.0	4	36.0	27.3	28.9	33.2	35.4	4	31.2	34.7	32.8	45.0	35.2	4	36.9	31.8	32	5.0
KYLE	24.0	36.0	41.0	40.0	4	35.3	33.0	42.0	42.0	45.0	4	40.5	36.7	29.7	37.9	38.9	4	35.8	38.3	40.4	48.2	41.1	4	42.0	35.3	32	1.0
Munich	19.0	27.0	33.0	39.0	4	29.5	26.0	34.0	37.0	39.0	4	34.0	25.0	25.2	29.4	32.2	4	27.9	32.7	29.5	40.0	29.1	4	32.8	28.9	32	9.0
BEN	21.0	32.0	39.0	37.0	4	32.3	28.0	38.0	38.0	41.0	4	36.3	27.3	27.4	33.3	36.1	4	31.1	37.3	33.2	46.5	36.2	4	38.3	32.0	32	3.0
MOUNTRAIL	20.0	29.0	38.0	38.0	4	31.3	29.0	35.0	40.0	40.0	4	36.0	27.0	26.1	33.1	34.9	4	30.3	34.0	33.2	44.6	33.2	4	36.3	30.6	32	6.0
MAIER	21.0	28.0	36.0	35.0	4	30.0	24.0	35.0	36.0	37.0	4	33.0	27.7	26.8	32.2	31.9	4	29.6	34.0	33.6	42.9	33.6	4	36.0	29.9	32	8.0
PLAZA	20.0	27.0	30.0	32.0	4	27.3	25.0	32.0	33.0	32.0	4	30.5	24.0	24.3	27.7	28.6	4	26.2	30.3	29.1	35.8	29.9	4	31.3	26.6	32	10.0
LEB SOCK	21.0	29.0	37.0	36.0	4	30.8	26.0	38.0	38.0	38.0	4	35.0	28.0	25.9	31.8	33.3	4	29.7	35.7	32.0	42.4	32.3	4	35.6	30.2	32	7.0
AC AVONLEA	21.0	31.0	38.0	38.0	4	32.0	28.0	38.0	38.0	40.0	4	36.0	29.0	26.9	33.1	36.5	4	31.4	34.0	30.7	44.5	38.3	4	36.9	31.8	32	4.0
AVERAGE	20.9	29.7	36.6	36.8	4	31.0	27.3	36.2	38.2	39.4	4	35.3	27.7	26.7	32.2	33.6	4	30.1	34.5	32.3	42.9	33.9	4	35.9	30.6	32	0.0

Table 7. Grain Protein of Alzada compared to check varieties in MSU' 2001-2004 Intrastate Durum Trials.

GRAIN PROTEIN (%)

VARIETY	DISTRICT 2 BOZEMAN DRYLAND						DISTRICT 3 HUNTLEY DRYLAND					DISTRICT 4 MOCCASIN FALLOW				DISTRICT 4 MOCCASIN NO-TILL			DISTRICT 5 HAVRE DRYLAND			
	2001(IRR)	2002	2003	2004	YRS	AVE	2002	2003	2004	YRS	AVE	2001	2003	YRS	AVE	2001	YRS	AVE	2002	2003	YRS	AVE
ALZADA	13.6	14.6	17.7	16.2	4	15.5	21.3	12.9	11.9	3	15.4	10.3	13.5	2	11.9	16.4	1	16.4	15.4	18.4	2	16.9
VIC	13.9	14.8	18.6	18.1	4	16.4	21.5	12.7	12.2	3	15.4	12.1	15.8	2	13.9	16.7	1	16.7	15.7	18.3	2	17.0
CHECK AVE	13.9	14.8	18.6	18.1	4	16.4	21.5	12.7	12.2	3	15.4	12.1	15.8	2	13.9	16.7	1	16.7	15.7	18.3	2	17.0
MONROE	13.5	14.6	18.6	16.7	4	15.8	23.0	12.5	11.7	3	15.7	11.6	15.3	2	13.5	16.9	1	16.9	15.9	19.3	2	17.6
KYLE	13.4	15.3	18.8	17.4	4	16.2	22.8	12.2	12.2	3	15.7	11.2	16.0	2	13.6	18.1	1	18.1	15.5	19.0	2	17.2
Munich	14.3	14.6	18.5	17.4	4	16.2	23.1	12.4	12.9	3	16.1	10.7	15.7	2	13.2	18.7	1	18.7	15.8	20.0	2	17.9
BEN	14.1	14.4	18.6	17.8	4	16.2	23.0	13.7	12.0	3	16.2	10.8	15.5	2	13.1	18.5	1	18.5	15.8	19.0	2	17.4
MOUNTRAIL	13.3	14.5	18.0	17.7	4	15.9	22.4	13.8	10.9	3	15.7	10.3	15.8	2	13.1	18.2	1	18.2	15.8	19.2	2	17.5
MAIER	14.6	14.8	19.6	18.9	4	17.0	23.1	12.8	12.8	3	16.2	11.0	16.0	2	13.5	18.0	1	18.0	16.4	20.0	2	18.2
PLAZA	13.9	13.3	19.7	16.5	4	15.8	21.8	12.6	12.1	3	15.5	12.1	15.1	2	13.6	19.6	1	19.6	15.2	18.6	2	16.9
LEBSOCK	14.1	14.3	18.3	17.2	4	16.0	21.8	12.7	11.7	3	15.4	10.5	13.6	2	12.1	16.5	1	16.5	15.4	18.5	2	17.0
AC AVONLEA	14.0	15.3	20.0	17.5	4	16.7	22.6	14.0	12.3	3	16.3	11.9	13.3	2	12.6	18.2	1	18.2	15.7	20.2	2	17.9
AVERAGE	13.9	14.6	18.8	17.4	4	16.2	22.4	12.9	12.1	3	15.8	11.1	15.1	2	13.1	17.8	1	17.8	15.7	19.1	2	17.4

VARIETY	DISTRICT 5											DISTRICT 6						OVERALL TOTAL		
	CONRAD DRYLAND					CONRAD IRRIGATED						SIDNEY DRYLAND			SIDNEY IRRIGATED			AVG	YEARS	RANK
	2001	2002	2003	YRS	AVE	2001	2002	2003	2004	YRS	AVE	2001	YRS	AVE	2001	YRS	AVE			
ALZADA	16.1	13.5	17.2	3	15.6	10.7	13.5	15.2	10.8	4	12.6	13.7	1	13.7	15.3	1	15.3	14.7	21	10.0
VIC	15.2	13.0	18.3	3	15.5	10.2	13.9	16.5	10.4	4	12.8	13.6	1	13.6	15.1	1	15.1	15.1	21	6.0
CHECK AVE	15.2	13.0	18.3	3	15.5	10.2	13.9	16.5	10.4	4	12.8	13.6	1	13.6	15.1	1	15.1	15.1	21	0.0
MONROE	17.2	13.3	18.7	3	16.4	10.3	13.8	16.6	10.9	4	12.9	14.1	1	14.1	14.7	1	14.7	15.2	21	3.0
KYLE	14.1	13.6	18.7	3	15.5	9.7	13.7	16.4	10.4	4	12.5	13.1	1	13.1	15.4	1	15.4	15.1	21	5.0
Munich	15.8	12.6	18.2	3	15.5	9.8	13.5	16.2	10.2	4	12.4	13.5	1	13.5	15.0	1	15.0	15.2	21	4.0
BEN	14.9	12.7	18.4	3	15.3	9.8	13.3	15.5	10.3	4	12.2	13.6	1	13.6	14.4	1	14.4	15.1	21	7.0
MOUNTRAIL	16.7	12.3	17.9	3	15.7	9.6	13.5	13.8	9.8	4	11.7	12.2	1	12.2	14.4	1	14.4	14.8	21	9.0
MAIER	17.4	13.1	17.9	3	16.1	9.4	13.4	15.6	10.2	4	12.2	14.0	1	14.0	15.2	1	15.2	15.4	21	2.0
PLAZA	16.8	11.5	18.4	3	15.6	9.7	12.1	16.2	9.6	4	11.9	12.9	1	12.9	14.0	1	14.0	14.8	21	8.0
LEBSOCK	16.4	11.6	18.5	3	15.5	9.1	14.0	16.0	10.6	4	12.4	13.0	1	13.0	14.2	1	14.2	14.7	21	11.0
AC AVONLEA	17.4	13.4	20.2	3	17.0	9.8	13.9	15.8	11.1	4	12.7	14.0	1	14.0	15.6	1	15.6	15.5	21	1.0
AVERAGE	16.2	12.8	18.4	3	15.8	9.8	13.5	15.8	10.4	4	12.4	13.4	1	13.4	14.8	1	14.8	15.1	21	0.0

Table 8. Milling and pasta quality of Alzada compared to check varieties in MSU' 2003 Intrastate Durum Trials.

2003 Durum Quality Summary (Bozeman, Moccasin, Havre)

(analysis performed by NDSU Lab)

Susan Lanning, 2003 Durum Trials - 10/21/2003

Summary Cultivar	Test Weight lb/bu	1000 kwt (g)	Sizing		Kernel Hardness NIR	% Protein 14%mb	Falling Number sec	Semolina Extraction %	Semolina Protein 14%mb	Semolina Color		Mixogram Pattern
			lg (%)	sm (%)						L	b	
Alzada	58.4	31.7	37.3	10.5	80.5	15.7	556	56.9	15.1	81.8	31.4	7
AC Avonlea	57.9	28.2	16.2	19.0	91.0	16.9	503	55.6	16.2	81.6	29.4	4
Ben	58.3	30.0	17.7	15.7	89.9	16.9	420	55.7	16.4	82.5	25.6	5
Dilse	57.7	27.7	10.8	25.3	88.6	17.4	413	55.8	16.7	82.5	29.5	6
Kyle	58.0	28.9	9.0	23.8	91.8	16.9	507	56.0	15.7	82.5	27.0	3
Laker	58.7	31.1	21.3	12.8	94.7	15.9	460	54.7	15.1	81.9	22.8	6
Lebsock	58.9	29.1	15.7	17.0	88.6	16.0	459	56.7	15.2	82.3	26.8	3
Maier	57.0	26.8	10.2	24.7	88.9	17.5	451	58.9	16.9	81.7	30.4	7
Monroe	57.6	31.5	23.3	13.3	89.2	16.8	409	56.2	16.1	82.7	28.0	5
Mountrail	57.1	27.3	11.2	23.7	87.1	16.4	452	57.5	16.1	82.1	26.5	4
Munich	56.4	25.9	10.0	26.5	88.9	17.2	411	56.6	16.6	81.7	29.1	3
Pierce	58.0	25.6	9.3	27.8	90.6	16.4	429	53.9	15.8	82.2	29.0	6
Plaza	57.1	27.2	11.8	26.5	84.0	16.8	555	56.2	15.9	81.2	28.5	4
Renville	57.7	26.2	8.3	30.8	89.5	16.6	444	58.6	16.0	82.4	27.3	4
Utopia	57.0	32.2	27.8	10.2	85.0	16.3	552	56.7	15.2	81.4	27.0	4
Vic	58.6	32.3	17.5	17.0	95.2	16.8	414	56.1	16.0	81.9	27.5	5