

2003 South Dakota Alfalfa Variety Trials

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Establishment and Management

Alfalfa plots are planted at a rate of 18 lbs PLS acre⁻¹ using a Brillion type seeder. Plots are 4 feet wide and 20 feet in length. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during the harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example, 'Brookings 2000' is the trial planted near Brookings in 2000.

2003 Results

Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries.

New trials were planted at Beresford and Highmore. Due to moisture stress in parts of the state, the trials at Highmore and Brookings were harvested only once during the season.

Contact Information

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SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improvement Research Farm

Planted 25 April 2000, RCB with 6 replicates

Entry	2003 3-Jun	2002 Total	2001 Total	2000 Total	00-03 Total
	Tons Dry Matter/Acre				
Released cultivars					
Vernal	1.50	1.72	1.53	1.66	6.41
Dakota	1.55	1.80	1.24	1.59	6.20
Legend Gold	1.53	1.71	1.28	1.60	6.10
DK134	1.37	1.66	1.29	1.75	6.05
Gold Rush 747	1.55	1.69	1.14	1.63	6.00
A-30-06	1.50	1.53	1.31	1.58	5.92
53H81	1.35	1.57	1.20	1.77	5.89
53V08	1.32	1.55	1.31	1.73	5.89
Maverick	1.42	1.63	1.35	1.51	5.88
Somerset	1.35	1.56	1.16	1.71	5.76
Husky Supreme	1.42	1.65	1.16	1.51	5.75
Frontier 2000	1.32	1.50	1.13	1.71	5.67
USA4230	1.30	1.56	1.19	1.46	5.50
Shaw	1.27	1.56	1.08	1.51	5.42
6410	1.25	1.46	1.10	1.59	5.39
Multiplier 3	1.37	1.47	1.11	1.32	5.25
<i>Released cultivar mean</i>	1.40	1.60	1.22	1.60	5.82
Experimental strains					
MT 9503	1.45	1.60	1.44	1.85	6.33
ZG 9931	1.38	1.46	1.36	1.65	5.84
ZG 9941	1.27	1.43	1.18	1.68	5.55
<i>Experimental strain mean</i>	1.37	1.50	1.33	1.73	5.91
Grand mean	1.39	1.59	1.25	1.62	5.85
Maturity (Kalu & Fick)	4.0				
LSD (P=0.05)	NS	0.19	0.25	NS	NS
CV (%)	14.3	10.6	17.4	18.6	10.8
MCV (%)		12.0	20.0		
LSR (%)		63.3	55.6		

NS = not significant at 0.05 level of probability

*Sprayed with Pursuit on 6/28/00

MCV = LSD/mean*100

50 lbs P2O5 applied preplant

LSR=LSD/range*100

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improvement Research Farm

Planted 1 May 2002, RCB with 6 replicates

2003

Entry 31-May
Tons DM/Acre

Released cultivars

Dakota	0.88
54H91	0.85
Hybriforce-400	0.85
6420	0.82
Husky	0.82

DS 9809	0.80
Multiplier 3	0.80
DS 211 Hyb	0.78
Feast +Ev	0.78
GoldRush 747	0.78

MegaTon 3.0	0.78
Survivor	0.77
WL 319 HQ	0.77
WL 327	0.77
Triad LA	0.75

54V54	0.73
A 30-06	0.73
Setter	0.73
Ameristand 403T	0.72
GH 766	0.72

LS 102	0.72
Vernal	0.72
Maverick	0.68
Frontier 2000	0.65

Grand mean	0.77
Maturity (Kalu & Fick)	3.2
LSD (P=0.05)	NS
CV (%)	14.9
MCV (%)	
LSR (%)	

NS = not significant at 0.05 level of probability

MCV = $LSD/mean*100$

LSR= $LSD/range*100$

Treflan applied before planting

50 lbs P2O5 applied preplant

SOUTH DAKOTA
 Beresford, Clay County, Southeast Research Farm
 Planted 28 April 2000, RCB with 6 replicates

Entry	2003					2002	2001	2000	00-03
	29-May	3-Jul	31-Jul	1-Sep	Total	Total	Total	Total	Total
Tons Dry Matter/Acre									
Released cultivars									
Excel	4.48	1.74	1.99	0.93	9.14	4.33	7.06	3.57	24.11
6420	4.44	1.75	1.79	0.72	8.69	3.95	6.75	3.79	23.18
GH 750	4.04	1.89	1.78	0.88	8.59	3.95	6.59	3.69	22.82
Shaw	4.25	1.74	1.62	0.65	8.26	3.96	6.36	3.88	22.47
645-II	4.18	1.74	1.73	0.62	8.28	3.97	6.24	3.85	22.33
GoldRush 747	4.18	1.65	1.57	0.62	8.02	3.91	6.61	3.78	22.32
Husky Supreme	3.96	1.67	1.61	0.63	7.87	3.87	6.53	3.77	22.04
Frontier 2000	4.10	1.63	1.46	0.61	7.81	3.80	6.36	3.61	21.58
Multiplier 3	3.96	1.72	1.81	0.68	8.15	3.76	6.19	3.39	21.49
6410	3.87	1.63	1.51	0.57	7.58	3.56	6.13	3.59	20.86
53H81	3.91	1.70	1.54	0.59	7.74	3.47	6.06	3.48	20.75
53V08	3.87	1.50	1.50	0.45	7.32	3.27	6.08	3.30	19.96
Vernal	3.85	1.56	1.48	0.42	7.31	3.22	5.91	3.35	19.78
Legend Gold	3.81	1.50	1.45	0.37	7.13	3.42	5.79	3.15	19.48
Maverick	3.56	1.45	1.34	0.42	6.77	3.18	5.70	3.43	19.09
<i>Released cultivar mean</i>	4.03	1.66	1.61	0.61	7.91	3.71	6.29	3.58	21.48
Experimental strains									
CW 94008	4.21	1.96	1.80	0.74	8.70	4.02	6.63	3.74	23.09
MT 9503	4.21	1.76	1.72	0.63	8.32	3.89	6.63	3.80	22.64
CW 54033	3.94	1.80	1.60	0.67	8.02	3.74	6.55	3.49	21.80
CW 74040	4.04	1.82	1.71	0.72	8.31	3.62	6.27	3.37	21.56
CW 64049	3.66	1.68	1.62	0.71	7.67	3.59	6.21	3.55	21.02
CW 64004	3.91	1.62	1.56	0.55	7.65	3.72	5.97	3.41	20.75
CW 73029	3.78	1.64	1.61	0.56	7.59	3.41	6.12	3.30	20.43
CW 75044	3.80	1.72	1.72	0.58	7.81	3.65	5.60	3.30	20.37
CW 64026	3.69	1.72	1.51	0.51	7.43	3.31	5.98	3.52	20.23
ZG 9840	3.81	1.53	1.46	0.42	7.21	3.36	5.62	3.35	19.55
<i>Experimental strain mean</i>	3.91	1.73	1.63	0.61	7.87	3.63	6.16	3.48	21.14
Grand mean	3.98	1.68	1.62	0.61	7.90	3.68	6.24	3.54	21.35
Maturity (Kalu & Fick)	4.0	5.4	4.5	4.5					
LSD (P=0.05)	0.46	NS	0.22	0.28	1.02	0.52	0.68	0.43	2.22
CV (%)	10.0	14.7	11.8	39.7	11.3	12.4	9.6	10.5	9.1
MCV (%)	11.6		13.6	45.4	12.9	14.2	10.9	12.0	10.4
LSR (%)	50.3		33.9	49.8	43.1	45.5	46.8	58.3	44.3

NS = not significant at 0.05 level of probability

50 lbs P2O5/Acre - preplant

MCV = LSD/mean*100

Treflan applied preplant

LSR=LSD/range*100

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm

Planted 29 April 2003, RCB with 6 replicates

Entry	2003		Total
	15-Jul	1-Sep	
	Tons DM/Acre		
Released cultivars			
6420	1.18	1.53	2.72
Bullseye	1.42	1.27	2.68
Rugged	1.35	1.28	2.62
Hybriforce-420/Wet	1.25	1.27	2.52
Gold Rush 747	1.22	1.28	2.50
A 30-06	1.23	1.25	2.48
Alfatar II	1.35	1.15	2.48
Rebel	1.30	1.17	2.48
FSG 406	1.18	1.28	2.43
54V46	1.22	1.20	2.42
Husky Supreme	1.27	1.15	2.42
Journey Brand 204	1.18	1.20	2.40
Extreme	1.23	1.15	2.37
54Q25	1.23	1.13	2.35
Evermore	1.37	0.95	2.33
420	1.13	1.17	2.32
FSG 505	1.22	1.05	2.30
WL 319HQ	1.20	1.08	2.28
Vernal	1.13	1.15	2.25
FSG 351	1.03	1.22	2.23
Notice II	1.15	1.05	2.23
WL 357HQ	1.13	1.10	2.23
4500	1.17	1.05	2.18
Somerset	1.12	1.05	2.17
Abundance	0.98	1.07	2.03
Grand mean	1.21	1.17	2.38
Maturity (Kalu & Fick)	5.0	4.0	
LSD (P=0.05)	NS	NS	NS
CV (%)	18.1	21.1	14.6
MCV (%)			
LSR (%)			

NS = not significant at 0.05 level of probability

MCV = $LSD/mean*100$

Treflan applied before planting

LSR= $LSD/range*100$

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA

Highmore, Hyde County, Central Research Farm

Planted 28 April 2003, RCB with 6 replicates

Entry 2003
14-Jul

Tons DM/acre

Released cultivars

Hybriforce-420/Wet	1.23
Somerset	1.22
Setter	1.21
Alfastar II	1.18
Hybriforce-400	1.17

FK 421	1.15
WL 357HQ	1.15
Husky Supreme	1.13
Multiplier 3	1.13
Gold Rush 747	1.11

Vernal	1.09
DKA 42-15	1.07
Maverick	1.05
Journey Brand 204	1.04
Notice II	1.04

A 30-06	1.03
54V54	0.98
<i>Released cultivar mean</i>	1.12

Experimental strains

CW 04030	1.10
CW 93013	1.10
CW 04027	1.07
CW 14026	1.07
CW 04022	0.99

CW 83010	0.98
CW 03019	0.91
CW 94023	0.91
WL 319HQ	0.86
CW 94025	0.83
<i>Experimental strain mean</i>	0.98

Grand mean	1.07
Maturity (Kalu & Fick)	4.5
LSD (P=0.05)	0.23
CV (%)	19.2
MCV (%)	21.9
LSR (%)	58.2

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

Treflan applied before planting

LSR=LSD/range*100

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station
Planted 3 May 2001, RCB with 6 replicates

Entries	13-Jun	2003 8-Jul	Total	2002 Total	2002-03 Total
	Tons Dry Matter/Acre				
Released cultivars					
WL327	1.99	0.52	2.51	1.85	4.36
HybriForce 400	1.95	0.58	2.53	1.81	4.34
54V54	2.02	0.57	2.59	1.51	4.10
WL342	1.92	0.53	2.45	1.64	4.09
Reliance	1.96	0.50	2.46	1.59	4.05
Feast + EV	2.00	0.46	2.46	1.58	4.04
Macon	1.88	0.50	2.37	1.63	4.00
Monument II	1.83	0.54	2.37	1.63	4.00
Frontier 2000	1.86	0.52	2.37	1.58	3.95
4 Traffic	1.81	0.44	2.25	1.66	3.91
Husky Supreme	1.83	0.47	2.30	1.59	3.89
Maverick	1.84	0.51	2.35	1.47	3.83
GoldRush 747	1.87	0.45	2.32	1.37	3.69
Vernal	1.82	0.38	2.20	1.46	3.66
Somerset	1.81	0.41	2.22	1.31	3.53
Grand mean	1.89	0.49	2.38	1.58	3.96
Maturity (Kalu & Fick)	4.5	4.0			
LSD (P=0.05)	NS	NS	NS	NS	NS
CV (%)	14.2	24.4	14.4	21.9	15.4
MCV (%)					
LSR (%)					

NS = not significant at 0.05 level of probability 50 lbs P2O5/Acre - preplant
 MCV = LSD/mean*100 Treflan applied preplant
 LSR=LSD/range*100