2010
OHIO FORAGE PERFORMANCE TRIALS

C O N T E N T S:

SUMMARY

This report is a summary of performance data collected from forage variety trials in Ohio during 2010, including commercial varieties of alfalfa, red clover, white clover and tall fescue in tests planted in 2008 to 2010 across three sites in Ohio: South Charleston, Wooster, and North Baltimore. For more details on forage species and management, see the *Ohio Agronomy Guide*, Ohio State University Extension Bulletin 472, (available online at http://ohioline.osu.edu/b472/0008.html).

Interpreting Yield Data

Yield data are reported in Tables 2 through 11. Details of establishment and management of each test are listed in footnotes below the tables. Least significant differences (LSD) are listed at the bottom of Tables 3 through 11. Differences between varieties are significant only if they are equal to or greater than the LSD value. If a given variety out yields another variety by as much or more than the LSD value, then we are 95% sure that the yield difference is real, with only a 5% probability that the difference is due to chance alone. For example, if variety X is 0.50 ton/acre higher in yield than variety Y, then this difference is statistically significant if the LSD is 0.50 or less. If the LSD is 0.51 or greater, then we are less confident that variety X really is higher yielding than variety Y under the conditions of the test.

The CV value or coefficient of variation, listed at the bottom of each table is used as a measure of the precision of the experiment. Lower CV values will generally relate to lower experimental error in the trial. Uncontrollable or unmeasurable variations in soil fertility, soil drainage, and other environmental factors contribute to greater experimental error and higher CV values.

Results reported here should be representative of what might occur throughout the state but would be most applicable under environmental and management conditions similar to those of the tests. The relative yields of all forage legume varieties are affected by crop management and by environmental factors including soil type, winter conditions, soil moisture conditions, diseases, and insects.

ALFALFA

Alfalfa has the highest combined yield and quality potential of any adapted perennial forage grown in Ohio. It is the state's largest single hay crop, being grown on about one-half of the total hay acres. Alfalfa requires well-drained soils with near-neutral pH (6.5-7.0) for greatest production and persistence. Alfalfa trials are initiated each year and data is collected for at least four years unless the stand becomes so depleted that further testing is no longer worthwhile; variety performance should be evaluated over several sites and years.

Guidelines for Selecting Alfalfa Varieties

To capitalize on alfalfa's potential, select high-yielding varieties with resistance to problem diseases. Consider these factors when selecting alfalfa varieties for Ohio:

1. **Yield.** Yield is the major factor in determining profitability of an alfalfa stand. Select varieties with high yields over several locations and years. Table 3 shows this comparison in percent of the average yield. Varieties that perform equally well across several locations and years are probably adapted to a wider range of environmental conditions. Stable yield performance across several environments is important because soils may vary on your farm and weather conditions vary from year to year. Conditions on most farms are such that several varieties may perform equally well.

2. **Persistence.** Another important consideration beyond yield is how long the stand will last. Study variety performance by age of stand to get an estimate of longevity of stand productivity. Some varieties may decline with age more rapidly than others. This may influence your choice of variety depending on how long you intend to keep the stand in production. For long-term rotations, choose varieties with good disease resistance and good performance in the fourth year of production. If you plan to harvest alfalfa for three years or less, then high performance during early years of the stand should be given major consideration.

3. **Fall dormancy (FD).** Alfalfa varieties with fall dormancy ratings of 1 through 5 are considered adequately winter hardy for Ohio conditions while those of 6 or higher are not considered adapted. Varieties with higher fall dormancy ratings tend to grow at a lower temperature, so they begin to grow earlier in the spring and later into the fall, extending the growing season. The fall dormancy rating does not correlate well with winter hardiness within the range of varieties adapted to the Midwest USA.

4. **Disease resistance.** Variety selection based on yield performance alone is less satisfactory than selections that also consider disease resistance characteristics. Resistance to specific disease-causing pathogens may be the most important attribute in an alfalfa variety. Pathogens can dramatically reduce yield and persistence of susceptible varieties. In an evaluation of older versus newer alfalfa varieties we found that varieties released in the mid-1990's yielded more and persisted longer than older varieties, primarily because of improved resistance to diseases that affected the trial. For more information on alfalfa diseases and varietal resistance to specific diseases, go to the following websites:
http://www.oardc.ohio-state.edu/ohiofieldcropdisease/alfalfa/alfalfa1.htm
http://www.uwex.edu/ces/forage/pubs/varinfo.htm

5. **Insect resistance.** Alfalfa varieties have been developed for resistance to potato leafhopper (PLH), which is the most consistently damaging insect pest of alfalfa in Ohio. This report includes several trials where yield tolerance to PLH damage is being evaluated. The PLH resistant varieties are not resistant to the alfalfa weevil, and they will need to be protected from that pest like all standard alfalfa varieties when weevil populations exceed the economic action threshold. For more information on insect management in alfalfa, see the following website: http://entomology.osu.edu/ag/pageview.asp?id=1029.

6. **Compare to check variety.** For comparisons of varieties across several trials, always compare varieties to the same check planted within the trial. The variety Vernal is used as a check in all Ohio trials.

7. **Use good management.** No variety can produce well under poor management. Good management considers all aspects of alfalfa production: seed bed preparation, liming and fertilization, seeding, pest control, harvest, storage, and post harvest treatment. Many newer varieties are better adapted to intensive management.

Summary of 2010 Crop Conditions

Rainfall was below normal across most of the state for April and August through October but above normal for June and July. Overall, rainfall for the season was below normal at all locations. For example, at South Charleston rainfall was 4.2 inches below the long-term average. Temperatures were well above normal for the entire growing season ranging from only 0.4 in October at Wooster to 8.4 in April at North Baltimore.

Weather 2010

	Wooster		S. Charleston		N. Baltimore	
Month	Total	DFA*	Total	DFA*	Total	DFA*
	Precipitation (inches of rainfall)					
	total	DFA	total	DFA	total	DFA
Apr	1.73	-1.57	2.20	-1.80	3.06	-0.24
May	3.31	-0.49	3.69	-0.81	4.41	1.11
June	6.79	2.89	5.98	1.78	3.96	0.36
July	4.90	0.90	5.15	1.15	2.37	-1.33
Aug	2.27	-1.23	1.42	-1.98	1.68	-1.12
Sept	2.78	-0.12	1.42	-1.38	1.48	-1.12
Oct	1.39	-0.91	1.14	-1.16	1.14	-1.16
Total	23.17	-0.53	21.00	-4.20	18.10	-3.50
	Average Daily Temperature (°F)					
Apr	54.2	6.1	56.5	4.5	57.3	8.4
May	62.4	4.0	64.8	3.7	62.7	3.1
June	70.4	2.8	73.3	3.0	72.4	2.9
July	74.1	2.5	57.7	1.9	76.2	3.3
Aug	72.4	2.4	73.8	1.8	73.8	3.2
Sept	64.4	0.6	66.9	1.3	66.1	1.7
Oct	52.5	0.4	54.9	1.0	54.2	1.7

*DFA = departure from long-term average

Alfalfa

The trials at North Baltimore had the highest yields, averaging over 8 tons/acre. The new spring seeding at Wooster yielded 2.56 tons/acre, which was very good for a seeding year stand. Alfalfa weevil populations were low at all sites and no insecticide was required for their control. Insecticide applications were used at all locations for control of potato leafhopper (PLH) in the standard yield trials. No insecticide was applied to control PLH in the alfalfa yield trial used to assess potato leafhopper resistance at South Charleston, seeded in 2008. High leafhopper populations resulted in significant yield differences among varieties at the July and September harvests in 2010 and the total over three years in that trial. Leafhopper resistant varieties are not resistant to alfalfa weevil, and need to be treated with insecticides if weevil populations exceed action thresholds.

Table 2:

Summary of Alfalfa Variety Performance in Ohio

Standard Trials - Insecticide applied (values are yield as a percent age of the trial average)

Variety	Marketers	South Charleston 2008-10	North Baltimore 2009-10	Wooster 2010	Total site-yrs	Avg all site yrs
4S417	Mycogen		109		2	109
6417	Garst	102			3	102
6422Q	Garst		99	83	3	93
6552	Garst	100			3	100
54Q32	Pioneer		101		2	101
55V12	Pioneer		99		2	99
55V48	Pioneer	111	102		8	106
A 4330	Producers Choice	99	102		5	100
Ameristand 403T	Americas Alfalfa		96		10	98
Ameristand 407TQ	Americas Alfalfa	102	102		5	102
DG 4210	CPS			96	1	96
Everlast II	CPS		105		2	105
FSG 329	Farm Science Genetics		98		2	98
FSG 420 LH	Farm Science Genetics		97		2	97
Genoa	NK Brand Seed	100			19	102
HybriForce-2400	Dairyland Seed			116	1	116
Hybri+Jade	Channel Bio			107	1	107
King Fisher 243	Byron Seed Supply		97		2	97
King Fisher 4020	Byron Seed Supply			108	1	108
LS 605	Legacy Seed		105		2	105
PGI 459	Producers Choice	100		102	4	101
PGI 557	Producers Choice			92	1	92
TS 4007	Producers Choice			100	1	100
VERNAL	Public	86	90	94	94	92
WL 343 HQ	CPS	97	98	94	13	97
WL 363 HQ	CPS	102	102	99	6	102
Trial Average Yield (annual tons/acre)		4.18[a]	5.50	2.56	--	--
Number of site years		3	2	1	--	--

[a] Does not include first harvest yield for 2009

Table 3:
Alfalfa Variety Trial
Ohio, South Charleston, Sown 4-23-08

					Total				Relative	
Variety	25-May	24-Jun	28-Jul	8-Sep	2010	2009[a]	2008	2008-10[a]	Yield	% Stand
Released Cultivars	---------- Tons Dry Matter/Acre ----------								% mean	9/20/10
55V48	2.00	1.93	1.77	1.09	6.80	5.20	1.95	13.95	111	95
WL 363 HQ	1.84	1.80	1.66	1.03	6.35	5.02	1.48	12.84	102	94
AmeriStand 407TQ	1.85	1.81	1.63	1.00	6.29	4.96	1.57	12.82	102	94
Garst 6417	1.84	1.75	1.44	0.94	5.97	4.89	1.88	12.74	101	94
PGI 459	1.95	1.76	1.53	0.97	6.21	4.81	1.57	12.59	100	95
Garst 6552	1.95	1.72	1.67	0.99	6.31	4.84	1.42	12.58	100	95
Genoa	1.88	1.71	1.58	1.16	6.33	4.66	1.57	12.56	100	96
A4330	1.84	1.69	1.58	0.84	5.96	4.85	1.66	12.47	99	93
WL 343 HQ	1.74	1.68	1.56	0.94	5.94	4.65	1.59	12.18	97	95
Vernal	1.85	1.19	1.26	0.66	4.97	4.55	1.28	10.80	86	91
Mean	1.87	1.71	1.57	0.96	6.11	4.84	1.60	12.55	--	94
LSD 0.05	ns	0.19	0.18	ns	0.67	0.25	0.34	0.83	--	ns
CV %	10.33	7.57	8.06	18.15	7.53	3.61	14.50	4.55	--	1.95

ns = no significant differences among varieties.
Data subjected to Nearest Neighbor AOV, adjusted means reported.

[a] Total yield represents cuts 2 to 4 in 2009 (cut 1 missing).

Establishment: Seeded with a Hege 3-point hitch drill with presswheels at 16 lb/a.
Plot size: 4' x 20' , 15'alleys and borders, RCBD with four reps.
Soil type / analysis: Crosby silt loam, pH=6.3, P=136 lbs/a, K=221 lbs/a, CEC=14.6, O.M.=2.0, (10/10).
Fertilization: 3 ton of lime was applied in March 2008. 500 lb/a of 0-0-60 was applied after first harvest.
2010 Pest control: Insecticide was applied on 8-June, 1-July, 11-August for potato leafhopper control.

Table 4:
Alfalfa Variety Trial
Ohio, North Baltimore, Sown 4-27-2009

Variety	25-May	25-Jun	26-Jul	25-Aug	Total 2010	Total 2009	Total 2009-10	Relative Yield
Released Cultivars:	---------- Tons Dry Matter/Acre ----------							% mean
4S417	3.38	2.47	1.89	1.27	9.02	2.98	12.00	109
LS 605	2.84	2.36	1.83	1.44	8.47	3.04	11.51	105
Everlast II	3.04	2.41	1.87	1.20	8.53	2.97	11.50	105
WL 363 HQ	2.75	2.43	1.94	1.25	8.38	2.85	11.24	102
AmeriStand 407TQ	2.80	2.59	1.85	1.24	8.47	2.77	11.24	102
55V48	2.95	2.48	1.88	1.10	8.40	2.82	11.23	102
A 4330	2.69	2.44	1.89	1.30	8.32	2.86	11.18	102
54Q32	2.74	2.49	1.78	1.26	8.26	2.83	11.09	101
55V12	2.62	2.48	1.88	1.10	8.09	2.85	10.94	99
6422Q	2.61	2.49	1.97	1.25	8.32	2.52	10.84	99
FSG 329	2.88	2.23	1.83	1.21	8.16	2.64	10.80	98
WL 343 HQ	2.75	2.28	1.95	1.12	8.10	2.64	10.74	98
FSG 420 LH	2.73	2.53	1.67	1.14	8.08	2.59	10.68	97
KingFisher 243	2.48	2.31	1.94	1.18	7.90	2.72	10.62	97
AmeriStand 403T	2.75	2.23	1.77	1.13	7.89	2.66	10.54	96
Vernal	3.24	1.86	1.29	0.81	7.21	2.67	9.88	90
Mean	2.82	2.38	1.82	1.19	8.21	2.79	11.00	--
LSD 0.05	0.40	0.22	0.16	0.11	0.52	ns	0.70	--
CV %	9.93	6.61	6.34	6.81	4.42	9.73	4.50	--

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.

NOTE: Stand was 95% for all varieties
ns = no significant differences among varieties.
Data subjected to Nearest Neighbor AOV, adjusted means reported.

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 16 lb/a.
Plot size:	4' x 20' , 15'alleys and borders, RCBD with four reps.
Soil type / analysis:	Holtville silt loam, pH=6.3, P=50 lbs/a, K=370lbs/a, CEC=19.5, O.M.=3.6, (10/10).
Fertilization:	Applied 300 # of 0-0-60 October 2009.
2010 Pest control:	Insecticide was applied on 12-July, 8-August for potato leafhopper control.

Table 5:
Alfalfa Variety Trial
Ohio, Wooster, Sown 4-23-2010

Variety	6-Jul	23-Aug	Total 2010	Reltive Yield
Released Cultivars:	----------	Tons Dry Matter/Acre	----------	% mean
HybriForce-2400	1.45	1.53	2.97	116
Kingfisher 4020	1.28	1.48	2.77	108
Hybri+Jade	1.32	1.41	2.73	107
PGI 459	1.33	1.28	2.61	102
TS 4007	1.30	1.25	2.55	100
WL 363 HQ	1.30	1.23	2.53	99
375HY/BR	1.21	1.31	2.52	99
DG 4210	1.11	1.36	2.47	97
WL 343 HQ	1.18	1.24	2.41	94
Vernal	0.91	1.49	2.40	94
PGI 557	1.08	1.28	2.36	92
6422Q	1.01	1.12	2.13	83
Mean	1.21	1.35	2.56	--
LSD 0.05	0.29	ns	ns	--
CV %	16.40	14.13	12.55	--

NOTE: Stand was 95% for all varieties
ns = no significant differences among varieties.
Data subjected to Nearest Neighbor AOV, adjusted means reported.

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 16 lb/a. Eptam applied PPI at 2 qt/a.
Plot size:	4' x 20', 15' alleys and borders, RCBD with four reps.
Soil type / analysis:	Riddles silt loam, pH = 6.1, P = 110 lb/a, K = 170 lb/a, CEC = 7.6 (10/10).
2010 Pest control:	Insecticide was applied 21-June & 22-July for potato leafhopper control.

Potato Leafhopper Resistant Alfalfa

No insecticide was applied to control potato leafhopper in the alfalfa yield trial for potato leafhopper resistance conducted at South Charleston, OH and seeded this year. High leafhopper populations resulted in significant yield differences among varieties. Leafhopper resistant varieties are not resistant to alfalfa weevil, and will need to be treated with insecticides if weevil populations exceed action thresholds.

Table 6:
Potato Leafhopper Resistant Alfalfa Variety Trial
Ohio, South Charleston, Sown 4-23-08

					Total				% of		Injury		
Variety	25-May	24-Jun	28-Jul	8-Sep	2010	2009[a]	2008	2008-10[a]	Checks	% Stand	24-Jun	28-Jul	8-Sep
Released Cultivars:		---------- Tons Dry Matter/Acre ----------								9/20/10			
53H92	2.11	1.57	1.43	0.92	5.99	3.97	1.21	11.18	119	94	1.8	1.7	1.3
EverGreen 3	1.99	1.61	1.46	0.79	5.82	3.84	0.98	10.66	113	96	1.0	1.5	1.1
Garst 6426	2.12	1.50	1.43	0.64	5.66	3.89	0.97	10.50	112	94	1.5	1.6	1.3
AmeriStand 404LH	1.84	1.52	1.43	0.73	5.45	3.63	0.87	10.07	107	95	1.3	1.5	1.2
Susceptible checks**	2.09	1.11	1.16	0.68	5.08	3.43	0.90	9.40		89	2.9	3.4	2.8
Mean	2.04	1.41	1.33	0.74	5.52	3.71	0.99	10.22	--	92	1.9	2.2	1.8
LSD 0.05	ns	0.13	0.15	0.19	0.57	0.30	ns	0.73	--	6.44	0.58	0.72	0.64
CV %	12.22	6.04	7.43	17.62	7.08	5.55	17.41	4.84	--	4.74	20.98	22.23	24.95

Variety	**Marketers**
53H92	Pioneer
EverGreen 3	NK Brand Seeds
Garst 6426	Garst
AmeriStand 404LH	America's Alfalfa

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.

** Susceptible check varieties were Vernal, DK 140 and 5454

[a] Total yield represents cuts 2 to 4 in 2009 (cut 1 missing).

ns = no significant differences among varieties.

Data subjected to Nearest Neighbor AOV, adjusted means reported.

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 16 lb/a.
Plot size:	4' x 20' , 15'alleys and borders, RCBD with four reps.
Soil type / analysis:	Crosby silt loam, pH=6.3, P=136 lbs/a, K=221 lbs/a, CEC=14.6, O.M.=2.0, (10/10).
Fertilization:	500 lb/a of 0-0-60 was applied after first harvest.
2010 Pest control:	No insecticide was applied to this trial.

Clover: Red & White

Red and white clover trials were seeded in 2010 at South Charleston. The reported yield was low because the first-harvest yields were not included due to a weed infestation. Dry weather also had a major impact on subsequent harvest. Trials were sprayed twice for Potato Leafhopper control to aid in establishment.

Red clover is better adapted than alfalfa to soils that are somewhat poorly drained and slightly acidic; however, greatest production will occur on well-drained soils with high water-holding capacity and pH above 6.0. Red clover is not as productive as alfalfa in the summer and it generally persists for a shorter time than alfalfa. New varieties are capable of persisting into a third year. While clover is a short-lived perennial that is well suited for pastures. It spreads and persists over time by vegetative propagation of stolons and by natural reseeding. White clover tolerates periods of poor drainage.

Table 7:
Red Clover Variety Trial
Ohio, South Charleston, Sown 4-13-2010

Variety	Marketers	3-Aug	7-Sep	Total 2010	Relative Yield
		---------- Tons Dry Matter/Acre ----------			% mean
LS 9703	Lewis Seed Co.	1.26	0.68	1.94	105
CW 30091*	Cal West Seeds	1.18	0.72	1.89	103
Medium red**	Public	1.06	0.81	1.87	101
Freedom MR!	Barenbrug USA	1.11	0.66	1.78	96
Rustler	Oregon Seeds, Inc.	1.14	0.61	1.75	95
Mean		1.15	0.70	1.85	--
LSD 0.05		0.17	ns	ns	--
CV %		9.73	23.06	8.99	--

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.
** Medium red was used as a check variety. Variety not stated (common)
ns = no significant differences among varieties.

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 12 lb/a.
Plot size:	4' x 20' , 7' alleys and borders, RCBD with four reps.
Soil type/analysis:	Crosby silt loam, pH=6.5, P=296 lbs/a, K=264 lbs/a, CEC=18.6, O.M.=2.9,(10/10).

Table 8:

White Clover Variety Trial

Ohio, South Charleston, Sown 4-13-2010

Variety	Marketers	Total 8/3/10	Relative Yield
		---Tons Dry Matter/Acr	% mean
CW 040041*	Cal West Seeds	1.28	107
AMP-124*	Ampac Seed	1.28	106
Companion	Oregon Seeds, Inc.	1.18	98
Check**	Public	1.18	98
Rampart	Oregon Seeds, Inc.	1.10	91
Mean		1.20	--
LSD 0.05		0.13	--
CV %		7.03	--

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.

** Check variety was variety not stated (common).

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 6 lb/a.
Plot size:	4' x 20' , 7' alleys and borders, RCBD with four reps.
Soil type/analysis:	Crosby silt loam, pH=6.5, P=296 lbs/a, K=264 lbs/a, CEC=18.6, O.M.=2.9,(10/10).

Tall Fescue

The tall fescue trial of endophyte-free varieties established at South Charleston in 2008 yielded 4.9 tons/acre. New varieties that are endophyte free or that contain a non-toxic endophyte (eg., Jessup Max Q) have potential to increase animal performance, especially during the summer grazing season, and to provide forage for beef cattle and sheep during autumn and early winter.

Table 9:
Tall Fescue Variety Trial
Ohio, South Charleston, Sown 4-23-2008

Variety	Marketers	27-May	8-Jul	7-Sep	2-Nov	Total 2010	Total 2009	Total 2009-10	Relative Yield
		---------- Tons Dry Matter/Acre ----------							% mean
Brutus	Saddle Butte Ag.	2.07	1.12	1.44	0.51	5.30	4.75	10.04	109
KY31 E-	Public	1.93	1.19	1.41	0.48	5.12	4.54	9.66	105
TF 0201*	Winfield Solutions	2.09	1.01	1.43	0.45	4.93	4.39	9.32	102
IS-FTF-31*	DLF International	1.92	1.09	1.32	0.43	4.71	4.24	8.95	97
IS-79/9901	DLF International	1.92	0.91	1.64	0.34	4.73	4.17	8.90	97
KY31 E+	Public	1.87	1.19	1.34	0.31	4.67	4.12	8.79	96
Bronson	Ampac Seed	2.33	1.05	1.40	0.44	5.18	3.44	8.62	94
Mean		2.02	1.08	1.42	0.42	4.95	4.24	9.18	--
LSD 0.05		ns	0.10	0.20	ns	0.47	ns	1.03	--
CV %		13.29	6.10	9.34	27.66	6.35	13.86	7.53	--

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.
ns = no significant differences among varieties.

Establishment: Seeded with a Hege 3-point hitch drill with presswheels at 16 lb/a.
Plot size: 4' x 20' , 7' alleys and borders, RCBD with four reps.
Soil type / analysis: Crosby silt loam, pH=6.5, P=82 lbs/a, K=253lbs/a, CEC=24.4, O.M.=2.8,(10/10).
2010 Fertilization: Applied 200 lb/a of 34-0-0 18-March, 150 lb/a on 28-May, 14-July and 9-September.

Annual Ryegrass

This trial data is from 2009. Total forage yields in the annual ryegrass trial seeded September 2008 were very high in 2009, ranging from 4.5 to 7.0 tons/acre among varieties. The first harvest was later than usual, which increased yield (but lowered forage quality), and the cool and moist summer conditions in 2009 promoted excellent growth. Annual ryegrass is a cool-season annual bunch grass that is highly palatable and digestible. It has high seedling vigor and is well adapted to either conventional or no-till establishment methods.

Table 10:
Annual Ryegrass Variety Trial
Ohio, South Charleston, Sown 9-12-2008

Variety	Marketer	27-May	23-Jun	3-Aug	Total 2009	Relative Yield
		----------Tons Dry Matter/Acre ----------				% of mean
Tetrelite II	DLF	2.42	1.51	1.45	6.98	130
PSG 29BF06*	Pickseed	2.05	1.53	1.09	6.24	116
Bison	DLF	2.48	1.30	1.23	6.23	116
Max	Pickseed	1.97	1.48	1.00	5.71	106
Feast II	Ampac Seed	1.43	1.36	1.36	5.68	106
Floregon	Mid Valley Ag. Prod	2.25	1.27	0.58	5.37	100
FL/NE 2006*	Oregon Seeds Inc.	1.95	1.34	0.57	5.22	97
AMP WHARG	Ampac Seed	1.88	1.16	0.66	4.87	91
MO 1	DLF	1.37	1.38	0.57	4.82	90
Marshall	Wax	1.56	1.25	0.58	4.78	89
AM-4NLS*	Ampac Seed	1.59	0.89	0.77	4.69	88
Gulf	Public	1.58	1.05	0.67	4.64	86
Flying A	Oregon Seeds Inc.	1.54	1.09	0.54	4.49	84
Mean		1.85	1.28	0.85	5.36	--
LSD 0.05		0.52	0.20	0.14	0.67	--
CV %		19.77	11.11	11.25	8.68	--

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.

Establishment: Seeded with a Hege 3-point hitch drill with presswheels at 20 lb/a.
Plot size: 4' x 20' , 7' alleys and borders, RCBD with four reps.
Soil type / analysis: 2009 Crosby silt loam, pH=6.1, P=182 lbs/a, K=450 lbs/a, CEC=24.1, O.M.=3.5,(11/07).
Fertilization: Applied 200 lb/a of 34-0-0 18-March, 150 lb/a on 29-May, 25-June.

Teff

Teff, *Eragrostis tef* (Zucc.)is an annual grass native to Ethiopia that is new to Ohio. It grows well under warm conditions, so produces especially well during our summer months. It appears to be most suitable for hay production. It does not tolerate frost, and must be planted in late May or early June in a well-prepared seedbed, and at a very shallow depth due to the small seed size.

This trial data is from 2009 when teff yielded a total of 4.1 tons of dry matter per acre from three harvests at South Charleston. For more information on its management, see the Cornell University FactSheet24, "Teff as Emergency Forage", at http://nmsp.css.cornell.edu/publications/factsheets/factsheet24.pdf.

Table 11:
Teff Variety Trial
Ohio, South Charleston, Sown 6-16-2009

Variety	Marketer	3-Aug	2-Sep	5-Oct	Total
		---------- Tons Dry Matter/Acre ----------			
CW 0604*	Cal West Seeds	1.60	1.41	1.39	4.41
CW 0801*	Cal West Seeds	1.29	1.33	1.46	4.10
Tiffany	Gries Seed Farm	1.41	1.27	1.39	4.06
VA-T1-Brown	Hankins Seed	1.48	1.26	1.28	4.01
Mean		1.45	1.32	1.38	4.14
LSD 0.05		0.29	ns	ns	0.31
CV %		12.21	11.12	9.62	4.63

* Variety tested using experimental seed that may not give performance identical to that of commercially available seed.

ns = no significant difference among varieties

Establishment:	Seeded with a Hege 3-point hitch drill with presswheels at 5 lb/a.
Plot size:	4' x 20' , 7' alleys and borders, RCBD with four reps.
Soil type/analysis:	Crosby silt loam, pH=6.1, P=100 lbs/a, K=402 lbs/a, CEC=19.4, O.M.=3.1,(10/08).
2009 Fertility:	200 lb/a of 46-0-0 was incorporated prior to planting. 100 lb/a was applied after the first harvest.
2009 Pest Control:	Herbicide was applied on 7/17/09 for broadleaf weed control.

ADDRESS OF MARKETERS

Allied Seed
9311 Highway 45
Nampa, ID83686
www.alliedseed.com

America's Alfalfa
P.O. Box 8246
Madison,WI53708
www.americasalfalfa.com

Ampac Seed Co.
P.O. Box 318
TangentOR97389
www.ampacseed.com

Barenbrug USA
P.O. Box 239
Tangent, OR 97359
www.barusa.com

Byron Seed Co.
775 N 350 E.
Rockville, IN 47872
765-569-3555

Cal West Seeds
38001 County Road 27
Woodland, CA95695
http://www.calwestseeds.com

Channel Bio
See Local Deeler
www.channel.com

Crop Protection Services
See Local Retailer
www.cpsagu.com

Dairyland Seeds
9728 Clinton Corners Rd.
Clinton,WI53525-9728
www.dairylandseed.com

DLF -International Seeds
P.O. Box 229
Halsey,OR97348
www.intlseed.com

Farm Science Genetics
9311 Highway 45
Nampa, ID83686
www.farmsciencegenetics.com

Garst Seed Company
7500 Olson memorial Hwy
Golden ValleyMN55427
www.garstseed.comGries

GriesSeed Farm, Inc.
2348 N. 5th St.
Fremont,OH43420

Hankins Seed
P.O. Box 98
Bonanza, OR97623
www.hankinsseed.com

Legacy Sees, Inc.
290 Depot St
Scandinavia, WI 54977
www.Legacyseeds.com

Lewis Seed Co.
P.O. Box 100
Shed, OR 97377
www.lewisseed.com

Mosanto
See Local Retailer
www.farmsource.com

Mycogen Seeds
9330 Zionsville Rd.
IndianapollisIN46268-1053
www.dowagro.com/mycogen/index

NK Brand Seeds
See local retailer
www.nk.com

Oregon Seed Inc.
33080 Red Bridge Rd.
Albany OR97322

Pickseed West Inc.
P.O. Box 888
Tangent,OR97389-
www.pickseed.com

Pioneer Hi-Bred Int'l
See Local Retailer
www.pioneer.com

Producers Choice
16690 Greystone Lane
JordanMN55352
www.producerschoiceseed.com

ProSeeds Marketing
13963 Westside Ln. S.
Jefferson,OR97352
www.proseed.net

Saddle Butte Ag.
P.O. Box 50
Shedd,OR97377
www.saddlebutte.comSeed

Research of Oregon
27630 Llewellyn Road
Corvallis,OR97333
www.sroseed.comSmith

Syngenta Seeds
11055 Wayzata Blvd.
Minnetonka, MN 55305
www.syngenta.com

Wax Seed Company
P.O. Box 60
Armory,MS38821

Winefield Solutions, LLC
2901 Packers Ave.
Madison,WI53707
www.winefielsolutionsllc.com

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