2011
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 2011, including commercial varieties of alfalfa, red clover, white clover tall fescue and annual ryegrass in tests planted in 2008 to 2011 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 10. 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 unmeasured 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 2 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 2011 Crop Conditions

Rainfall was above normal for the season at all locations and monthly departures were above normal with only a few exceptions (Table 1). At South Charleston and N. Baltimore rainfall was more than 10 inches above the long-term average. Temperatures were well above normal for most of the growing season with the exception of September at S. Charleston and August and September at N. Baltimore and few exceptions (Table 1).

Table 1:
Weather 2011

	Wooster		S. Charleston		N. Baltimore	
Month	Total	DFA*	Total	DFA*	Total	DFA*
	Precipitation (inches of rainfall)					
	total	DFA	total	DFA	total	DFA
Apr	4.55	1.25	7.68	3.68	5.61	2.31
May	7.27	3.37	8.06	3.46	8.56	5.16
June	3.12	-0.17	4.28	0.08	1.40	-2.20
July	2.93	-1.17	6.19	2.09	4.29	0.49
Aug	3.66	0.60	1.63	-1.87	3.74	0.74
Sept	3.83	0.73	5.85	2.85	6.60	3.90
Oct						
Total	25.36	4.61	33.69	10.29	30.20	10.40
	Average Daily Temperature (°F)					
Apr	50.5	2.4	53.4	2.4	49.2	0.3
May	61.3	2.8	62.8	1.5	61.4	1.6
June	69.0	1.4	72.0	1.7	71.9	2.4
July	75.7	4.5	78.3	4.5	78.6	5.8
Aug	70.4	0.5	72.1	0.1	71.0	-0.4
Sept	64.3	0.5	63.8	-1.8	63.2	-1.2
Oct						

*DFA = departure from long-term average

Alfalfa

The trials at North Baltimore had the highest yields, averaging over 8 tons/acre and higher than the average yield in 2010. A new spring seeding at South Charleston had to be delayed until August due to the wet weather. First harvest yields at South Charleston and Wooster were well below normal due to the rainfall. Alfalfa stands at S. Charleston declined significantly during the growing season. 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 (Table 6). High leafhopper populations resulted in significant yield differences among varieties at the June, July, and September harvests in 2011 and the total over four 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 of the trial average)

Variety	Marketers	South Charleston 2008-11	North Baltimore 2009-11	Wooster 2010-11	Total site-yrs	Avg all site yrs
4S417	Mycogen		108		3	108
6417	Garst	101			4	101
6422Q	Garst		98	92	5	96
6552	Garst	100			4	100
54Q32	Pioneer		100		3	100
55V12	Pioneer		99		3	99
55V48	Pioneer	110	102		10	106
A 4330	Producers Choice	101	102		7	101
Ameristand 403T	Americas Alfalfa		98		11	99
Ameristand 407TQ	Americas Alfalfa	102	102		7	102
DG 4210	Crop Protection Service			97	2	97
Everlast II	Crop Protection Service		102		3	102
FSG 329	Farm Science Genetics		100		3	100
FSG 420 LH	Farm Science Genetics		97		3	97
Genoa	NK Brand Seed	101			20	102
HybriForce-2400	Dairyland Seed			103	2	103
Hybri+Jade	Channel Bio			105	2	105
King Fisher 243	Byron Seed Supply		98		3	98
King Fisher 4020	Byron Seed Supply			110	2	110
Radiance HD	Legacy Seed		104		3	104
PGI 459	Producers Choice	99		102	6	100
PGI 557	Producers Choice			94	2	94
TS 4007	Producers Choice			98	2	98
VERNAL	Public	85	88	90	97	91
WL 343 HQ	Crop Protection Service	99	99	98	16	98
WL 363 HQ	Crop Protection Service	103	100	99	9	101
Trial Average Yield (annual tons/acre)		4.19[a]	6.58	4.20	--	--
Number of site years		4	3	2	--	--

[a] Does not include first harvest yield for 2009

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

					Total					Relative	
Variety	1-Jun	29-Jun	27-Jul	13-Sep	2011	2010	2009[a]	2008	2008-11[a]	Yield	% Stand*
Released Cultivars:					Tons Dry Matter/Acre					% mean	9/22/11
55V48	1.68	1.16	0.92	0.79	4.56	6.80	5.20	1.95	18.50	110	67
WL 363 HQ	1.37	1.05	1.15	0.78	4.40	6.35	5.02	1.48	17.24	103	67
AmeriStand 407TQ	1.46	1.02	1.04	0.86	4.36	6.29	4.96	1.57	17.17	102	54
Genoa	1.36	1.03	1.11	0.88	4.38	6.33	4.66	1.57	16.94	101	64
A4330	1.31	1.08	0.97	0.93	4.41	5.96	4.85	1.66	16.87	101	62
Garst 6417	1.30	1.02	1.12	0.81	4.12	5.97	4.89	1.88	16.86	101	61
Garst 6552	1.05	1.06	1.11	0.85	4.19	6.31	4.84	1.42	16.77	100	62
PGI 459	1.41	0.83	0.97	0.77	3.93	6.21	4.81	1.57	16.52	99	51
WL 343 HQ	1.42	1.13	1.07	0.75	4.32	5.94	4.65	1.59	16.51	98	67
Vernal	1.36	0.69	0.69	0.78	3.46	4.97	4.55	1.28	14.26	85	45
Mean	1.37	1.01	1.01	0.82	4.21	6.11	4.84	1.60	16.76	--	60
LSD 0.05	ns	ns	0.18	ns	ns	0.67	0.25	0.34	1.21	--	11.4
CV %	15.6	19.0	12.0	22.3	11.5	7.5	3.6	14.5	5.0	--	13.1

* Stands were greatly reduced over the past season due to a hard winter and very wet spring.

[a] Total yield represents three harvest dates in 2009.

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' , 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).
2011 Fertilization: 500 lb/a of 0-0-60 was applied after first harvest.
2011 Pest control: Insecticide was applied on 13-June, 12-July, 10-August for potato leafhopper control.

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

					Total				Relative	% Stand
Variety	9-Jun	8-Jul	4-Aug	14-Sep	2011	2010	2009	2009-11	Yield	9/28/11
Released Cultivars:		---------- Tons Dry Matter/Acre ----------							% mean	
4S417	3.39	2.21	2.03	1.77	9.41	9.02	2.98	21.40	108	92
Radiance HD	3.35	2.11	1.93	1.57	8.95	8.47	3.04	20.46	104	91
55V48	3.39	2.14	1.97	1.52	9.01	8.40	2.82	20.24	102	94
Everlast II	2.98	2.14	1.95	1.65	8.72	8.53	2.97	20.22	102	94
AmeriStand 407TQ	3.13	2.11	2.08	1.64	8.96	8.47	2.77	20.20	102	95
A 4330	3.30	2.13	1.97	1.61	9.01	8.32	2.86	20.19	102	93
54Q32	3.17	2.15	1.90	1.42	8.65	8.26	2.83	19.74	100	92
WL 363 HQ	2.73	2.21	1.99	1.58	8.50	8.38	2.85	19.74	100	95
FSG 329	3.17	2.19	1.95	1.60	8.90	8.16	2.64	19.70	100	89
55V12	3.22	2.13	1.92	1.40	8.67	8.09	2.85	19.61	99	94
WL 343 HQ	3.15	2.14	1.97	1.47	8.73	8.10	2.64	19.47	99	95
6422Q	2.87	2.21	1.99	1.53	8.59	8.32	2.52	19.43	98	95
AmeriStand 403T	3.27	2.18	1.87	1.56	8.88	7.89	2.66	19.42	98	92
KingFisher 243	3.14	2.15	1.92	1.50	8.71	7.90	2.72	19.33	98	91
FSG 420 LH	3.34	1.84	1.85	1.40	8.43	8.08	2.59	19.10	97	93
Vernal	2.83	1.62	1.66	1.46	7.58	7.21	2.67	17.45	88	86
Mean	3.16	2.11	1.94	1.54	8.76	8.21	2.79	19.76	--	93
LSD 0.05	0.34	0.20	0.14	0.11	0.46	0.52	ns	0.87	--	3.14
CV %	7.6	6.6	5.0	5.1	3.7	4.4	9.7	3.1	--	2.4

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

Data subjected to Nearest Neighbor AOV, adjusted means reported.
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' , 15'alleys and borders, RCBD with four reps.
Soil type / analysis: Holtville silt loam, pH=6.5, P=84 lbs/a, K=358lbs/a, CEC=15.8, O.M.=3.1, (10/07).
2011 Fertilization: 1 ton of lime in July 2008 and 300# of 0-0-60 was applied in October 2009.
2011 Pest control: Insecticide was applied on 27-June, 22-July, 19-August for potato leafhopper control.

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

Variety	24-May	29-Jun	2-Aug	8-Sep	Total 2011	Total 2010	Total 2010-11	Relative Yield	% Stand 9/28/2011
Released Cultivars:	----------Tons Dry Matter/Acre ----------							% mean	
Kingfisher 4020	1.82	1.82	1.70	1.03	6.47	2.77	9.23	110	98
Hybri+Jade	1.49	1.67	1.87	1.03	6.09	2.73	8.82	105	91
HybriForce-2400	1.50	1.53	1.77	0.93	5.68	2.97	8.66	103	92
PGI 459	1.62	1.62	1.74	1.01	5.96	2.61	8.57	102	92
WL 363 HQ	1.56	1.55	1.75	0.95	5.76	2.53	8.29	99	94
TS 4007	1.35	1.62	1.79	0.99	5.70	2.55	8.26	98	93
WL 343 HQ	1.52	1.72	1.57	0.94	5.82	2.41	8.23	98	94
DG 4210	1.67	1.55	1.60	0.91	5.68	2.47	8.14	97	90
PGI 557	1.48	1.52	1.63	0.95	5.53	2.36	7.89	94	94
6422Q	1.59	1.61	1.54	0.90	5.60	2.13	7.73	92	90
Vernal	1.43	1.51	1.43	0.75	5.13	2.40	7.53	90	76
Mean	1.57	1.65	1.67	0.95	5.84	2.56	8.40	--	92
LSD 0.05	ns	0.27	0.23	0.12	ns	ns	0.87	--	7.2
CV %	12.7	11.6	9.6	9.1	8.4	12.6	7.2	--	5.5

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

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 = 6.5, P =76 lb/a, K = 176 lb/a, CEC = 7.8 (10/09).
2011 Fertility:	Applied 120 lb/a 0-46-0 and 300 lb/a 0-0-60 after first harvest.
2011 Pest control:	Insecticide was applied 8-June, 14-July and 17-August 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, Ohio. 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	Marketers	1-Jun	29-Jun	27-Jul	13-Sep	2011	2010	2009[a]	2008	2008-11[a]	Checks	% Stand[b]	29-Jun	27-Jul
Released Cultivars:		---------- Tons Dry Matter/Acre ----------										9/22/11		
Garst 6426	Garst	1.07	1.29	1.16	0.81	4.41	5.66	3.89	0.97	15.07	123	63	2.3	1.7
53H92	Pioneer	1.14	1.01	0.94	0.68	3.72	5.99	3.97	1.21	14.89	121	57	2.0	2.0
EverGreen 3	NK Brand Seeds	1.06	1.14	1.09	0.72	3.98	5.82	3.84	0.98	14.77	120	62	1.8	1.8
AmeriStand 404LH	America's Alfalfa	1.07	1.20	1.22	0.68	4.13	5.45	3.63	0.87	14.13	115	59	2.3	1.8
Susceptible checks**		0.98	0.81	0.70	0.50	2.98	5.08	3.43	0.90	12.29	100	43.68	3.92	3.99
Mean		1.07	1.06	0.96	0.66	3.75	5.52	3.71	0.99	13.97	--	54	2.69	2.59
LSD 0.05		ns	0.21	0.26	0.20	0.39	0.57	0.30	ns	0.94	--	10.35	0.76	0.52
CV %		15.1	13.5	18.2	20.2	7.1	7.1	5.6	17.4	4.6	--	13.1	19.3	13.6

* 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 three harvest dates in 2009

[b] Stands were greatly reduced over the past season due to a hard winter and very wet spring.

Data subjected to Nearest Neighbor AOV, adjusted means reported.
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' , 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).
2011 Fertilization:	500 lb/a of 0-0-60 was applied after first harvest.
2011 Pest control:	No insecticide was applied to this trial.

Clover: Red & White

Red and white clover trials were seeded in 2010 at South Charleston. Trials were sprayed after the first harvest for potato Leafhopper (PLH) control to aid new growth due to the high numbers of PLH. 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

					Total			Relative
Variety	Marketers	1-Jun	14-Jul	13-Sep	2011	2010	2010-11	Yield
		Tons Dry Matter/Acre						% mean
LS 9703	Lewis Seed Co.	2.27	2.40	2.64	7.23	1.94	9.25	112
CW 30091*	Cal West Seeds	2.20	2.27	2.42	6.98	1.89	8.79	107
Rustler	Oregon Seeds, Inc.	2.32	2.11	2.47	6.84	1.75	8.66	105
Freedom MR!	Barenbrug USA	1.99	2.26	2.23	6.54	1.78	8.26	100
Medium red**	Public	1.82	1.39	1.16	4.38	1.87	6.24	76
Mean		2.12	2.09	2.18	6.39	1.85	8.24	--
LSD 0.05		0.28	0.27	0.53	0.77	ns	0.73	--
CV %		8.52	8.46	15.53	7.78	8.99	5.73	--

* 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.
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).
2011 Fertility: 500 lb/a of 0-0-60.
2011 Pest control: Insecticide was applied on 20-July for potato leafhopper control.

Table 8:

White Clover Variety Trial

Ohio, South Charleston, Sown 4-13-2010

Variety	Marketers	1-Jun	14-Jul	13-Sep	Total 2011	Total 2010	Total 2010-11	Relative Yield
		----------Tons Dry Matter/Acre ----------						% mean
Companion	Oregon Seeds, Inc.	1.51	1.07	1.17	3.76	1.18	4.94	104
AMP-124*	Ampac Seed	1.22	1.14	1.19	3.54	1.28	4.82	101
CW 040041*	Cal West Seeds	1.37	1.02	1.08	3.47	1.28	4.75	100
Rampart	Oregon Seeds, Inc.	1.38	1.01	1.18	3.58	1.10	4.68	98
Check	Public	1.34	1.03	1.07	3.44	1.18	4.62	97
Mean		1.37	1.05	1.14	3.56	1.20	4.76	--
LSD 0.05		ns	ns	ns	ns	0.13	ns	--
CV %		12.76	15.00	10.93	10.46	7.03	7.90	--

* 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 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).
2011 Fertility: 500 lb/a of 0-0-60.
2011 Pest control: Insecticide was applied on 20-July for potato leafhopper control.

Tall Fescue

The tall fescue trial of endophyte-free varieties established at South Charleston in 2008 averaged 4.71 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

						Total				Relative
Variety	Marketer	31-May	29-Jun	14-Sep	11-Nov	2011	2010	2009	2009-11	Yield
		---------- Tons Dry Matter/Acre ----------								% mean
Brutus	Saddle Butte Ag.	2.36	0.63	1.24	0.64	4.94	5.30	4.75	14.59	105
KY31 E-	Public	2.18	0.61	1.17	0.58	4.67	5.12	4.54	14.09	101
IS-79/9901	DLF International	2.22	0.55	1.26	0.80	4.75	4.73	4.17	13.88	100
Bronson	Ampac Seed	2.56	0.68	1.26	0.74	5.22	5.18	3.44	13.84	100
TF 0201*	Winfield Solutions	2.11	0.64	1.23	0.43	4.30	4.93	4.39	13.75	99
KY31 E+	Public	2.24	0.60	1.20	0.53	4.61	4.67	4.12	13.75	99
IS-FTF-31*	DLF International	2.17	0.60	1.17	0.58	4.46	4.71	4.24	13.32	96
Mean		2.26	0.62	1.22	0.61	4.71	4.95	4.24	13.89	--
LSD 0.05		ns	0.15	ns	ns	ns	0.47	ns	ns	--
CV %		13.9	16.7	13.8	26.4	10.2	6.4	13.86	6.48	--

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

Establishme: 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=6.1, P=98 lbs/a, K=394lbs/a, CEC=19.4, O.M.=3.1,(10/10).
Fertilization: Applied 200 lb/a of 34-0-0 25-March, 150 lb/a on 1-June, 2-July and 17-September.

Annual Ryegrass

Table 10 reports yield of the trial seeded in fall 2010. Due to low rainfall there was no harvestable yield in the fall of 2010. Therefore, total yield represents dates collected in 2011 only. The first harvest was later than usual, which increased yield (but lowered forage quality), the warm and moist summer conditions in 2011 promoted excellent growth.

Table 11 reports yield of the trial seeded in September of 2011 and includes only one harvest date this November. That trial will be continued into 2012 where ranking of varieties may change. 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 9-9-2010

Variety	Marketers	10-May	8-Jun	29-Jun	Total 2011	Relative Yield
		-------- Tons Dry Matter/Acre --------				% mean
Barmultra II	Barenbrug USA	2.56	2.06	1.07	5.74	111
TAMTBO	Oregon Seeds Inc.	2.67	2.01	0.71	5.36	104
Barextra	Barenbrug USA	2.24	1.94	0.99	5.14	99
Winterhawk	Oregon Seeds Inc.	2.61	1.78	0.56	4.93	95
Marshall	Wax Seed Co.	2.13	1.92	0.57	4.66	90
Mean		2.44	1.94	0.78	5.17	--
LSD 0.05		ns	0.13	0.20	0.61	--
CV %		11.9	4.3	16.0	7.7	--

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: Crosby silt loam, pH=6.1, P=98 lbs/a, K=394lbs/a, CEC=19.4, O.M.=3.1,(10/10).

2010 Fertilization: Applied 50 lb/a of 34-0-0 incorporated pior to seeding.

2011 Fertilization: Appplied 100 lb/a of 34-0-0 29-March, 50 lb/a on 12-May and 10-July.

Table 11:

Annual Ryegrass Variety Trial

Ohio, South Charleston, Sown 9-9-2011

Variety	Marketers	11-Nov	Relative Yield
		-- Tons Dry Matter/Acre --	% mean
Verdure	Smith Seed Services	0.40	142
ORWH-11*	Not marketed as of 1 Nov.	0.36	130
PS-Lm-09-2*	Not marketed as of 1 Nov.	0.33	119
TAMTBO	Oregon Seeds	0.33	116
ORWHTAR-11*	Not marketed as of 1 Nov.	0.32	115
Max	Pickseed USA	0.30	107
Maximo	Pickseed USA	0.30	107
Winterhawk	Oregon Seeds	0.29	102
PS-AR-09-1*	Not marketed as of 1 Nov.	0.23	83
B-10.0960	Saddle Butte AG	0.13	46
Ed	Smith Seed Services	0.09	32
Mean		0.28	--
LSD 0.05		0.16	--
CV %		38.5	--

* 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: Crosby silt loam, pH=6.1, P=98 lbs/a, K=394lbs/a, CEC=19.4, O.M.=3.1,(10/10).

2011 Fertilization: Appplied 100 lb/a of 46-0-0 4 - October.

ADDRESS OF MARKETERS

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
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

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

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

NK Brand Seeds
See local retailer
www.nk.com

Oregon Seed Inc.
33080 Red Bridge Rd.
Albany OR97322

Pickseed USA, Inc.
P.O. Box 888
Tangent,OR 97389-
www.pickseed.com

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

Producers Choice
16690 Greystone Lane
JordanMN55352
www.producerschoiceseed.com

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

Smith Seed Services
P.O. Box 288
Halsey, OR 97348
www.smithseed.com

Wax Seed Company
P.O. Box 60
Armory,MS 38821
800-647-1226

Winfield Solutions, LLC
2901 Packers Ave.
Madison,WI53707
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