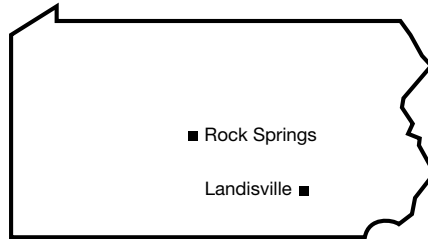


2012 FORAGE TRIALS REPORT

SUMMARY

The *2012 Forage Trials Report* summarizes performance data collected from ongoing forage trials at two sites in Pennsylvania. The report includes data from alfalfa and cool-season (forage) grass trials established at the Russell E. Larson Agricultural Research Center at Rock Springs and the Southeast Research and Extension Center at Landisville.



2012 Forage Growing Season

An unusually warm spring caused the forages to begin growing, and then several frosts burnt back most of that initial growth. Even with these frosts, first harvest across Pennsylvania was generally two weeks ahead of normal. Highly variable weather then settled in, with some regions suffering from very dry conditions, which resulted in reduced forage production across much of the state, while other regions had consistent rains throughout the growing season. The dry conditions were excellent for curing hay. Quality of samples entered in the 2012 Pennsylvania Forage and Grassland Council's Hay Show at Ag Progress Days reflects these good haymaking conditions. The average quality of the 2012 samples was four percentage units lower in neutral detergent fiber (NDF) and ten units higher in relative feed value (RFV) than normal.

Alfalfa weevil populations were generally low, with few localized outbreaks. Potato leafhopper infestations were high across most of the state. The dry weather in some areas caused leafhopper damage to be more pronounced than in a typical year. Cereal leaf mite damage to timothy and grubs damage to orchardgrass continue to be problems.

Growing-season precipitation amounts

for the past four years at Rock Springs and Landisville are presented in Figures 1 through 8 (page 2) by monthly total. Normal amounts also are presented.

Criteria for Reporting Varieties

All varieties listed in this report are eligible for certification by seed-certifying agencies and are marketed in Pennsylvania (see Tables 1, 10, and 12). Proprietary and public varieties are included; blends and "commons" are not included.

Interpreting Yield Data and Stand Scores

Yield summaries and stand scores for individual trials appear in Tables 2 through 9, 11, and 13. Only varieties currently being marketed in Pennsylvania appear in the tables. Although the trials contain up to 46 total entries, many of these are advanced experimental varieties or are not currently offered for sale in Pennsylvania. After these entries are named and/or become available for purchase in Pennsylvania, they will be included in future reports.

Experimental alfalfa entries that become named varieties will be footnoted as such. The newly named variety will be published in the Forage Trials Report only if it is entered as a commercial variety in the next available trial.

Varieties are ranked according to

their yield performance this crop year. In addition, yield totals for the previous harvest years are reported, as well as average yields over the life of the stand. It is important to evaluate the average yields as well as the yields obtained this year because performance over a three- to four-year period is valuable in a long-term forage rotation.

The stand score is a visual estimation of the amount of groundcover that is given following harvest in the fall. The stand score is reported on a scale from 1 to 100, with 100 considered a perfect stand. This score is valuable as an indicator of varietal persistence.

Please keep in mind when reviewing the yield and stand tables that differences between varieties are significant only if the least significant difference (LSD) between varieties is exceeded. LSD is the minimum difference between any two varieties necessary for us to be 95 percent confident that this difference is not attributable to mere chance. For example, if variety A is 0.50 ton/acre higher in yield than variety B, then this difference is statistically significant if the LSD is 0.50 or less. If the LSD is 0.51 or greater, then we cannot be confident that variety A really yields higher than B under given environmental and management conditions.

The value for coefficient of variation (CV) is a measure of relative variation useful in evaluating the precision achieved in an experiment. In grain and forage trials, for example, the CV for yield often is between 5 and 20 percent. Acceptable levels of the CV vary for each trait measured. Confidence in the reliability of the experimental results declines as the CV increases. Uncontrollable or immeasurable variations in soil fertility, soil drainage, and other environmental factors contribute to increased CV levels.

Figure 1. 2012 Precipitation at Rock Springs

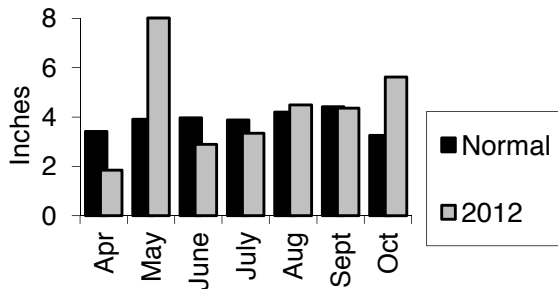


Figure 2. 2012 Precipitation at Landisville

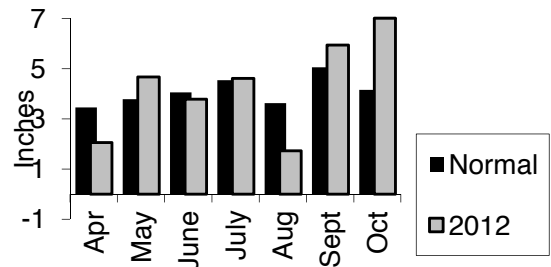


Figure 3. 2011 Precipitation at Rock Springs

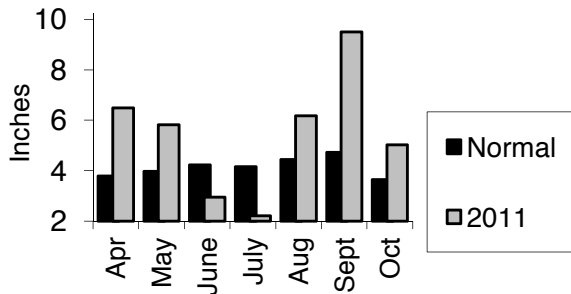


Figure 4. 2011 Precipitation at Landisville

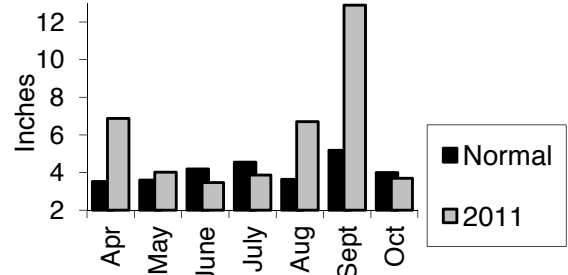


Figure 5. 2010 Precipitation at Rock Springs

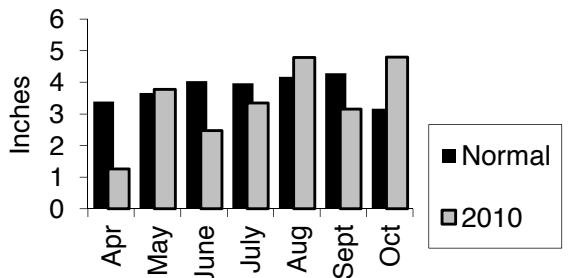


Figure 6. 2010 Precipitation at Landisville

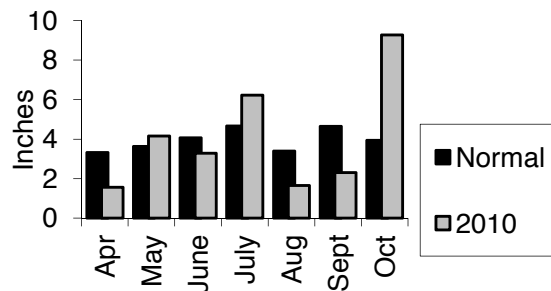


Figure 7. 2009 Precipitation at Rock Springs

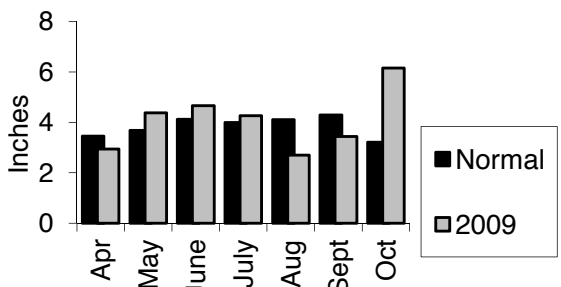
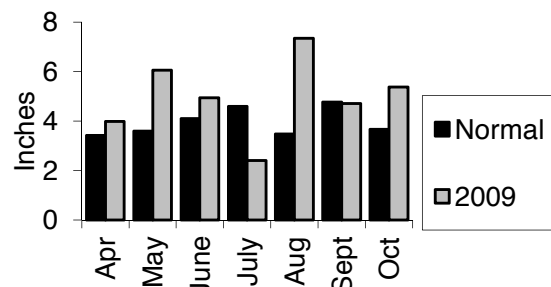


Figure 8. 2009 Precipitation at Landisville



ALFALFA

Many varieties of alfalfa exist, and selection of the appropriate variety is an important management decision. This report lists performance data for those varieties included in the Penn State Alfalfa Variety Testing Program. Evaluation trials include both commercially available and advanced experimental varieties. Trials are initiated each year at the Rock Springs and Landisville research stations. In each trial, collection of yield, stand, and other data continues for a maximum of four years or until the stand becomes so depleted that data collection is no longer worthwhile.

Trials at both locations are established on well-drained Hagerstown silt loam soils. Major site differences are likely to be reflected in the longer growing season, slightly elevated temperatures, and tendency toward late summer drought at the Landisville site.

Keep in mind a few points when evaluating alfalfa variety performance data:

- Selection of a variety on the basis of yield performance alone is generally less satisfactory than selections that also consider stand score and pest resistance.
- Conditions on most farms are such that several varieties may perform nearly equally. It usually is not necessary to rely on a single variety.
- No variety, regardless of its excellence, can thrive under poor management. Good management considers all aspects of alfalfa production, including seedbed preparation, lime and fertilizer, seeding, pest control, harvest, storage, and postharvest treatment. Many modern varieties are adapted to intensive management.

Fall Dormancy

Fall dormancy ratings of alfalfa range from one (very dormant) to nine (having no dormancy). Varieties that have less fall dormancy (higher numerical rating) regrow faster after harvest and exhibit greater growth in the fall compared to those varieties with more fall dormancy (lower numerical rating).

Pest Resistance

Disease and insect resistance may be the most important attributes of an alfalfa variety. The ratings for pest resistance given in this report can serve as a good indicator of a variety's potential performance in your area. Be aware of your pest-resistance needs and choose the appropriate varieties.

Sclerotinia stem and crown rot is becoming a serious concern for growers throughout the state because there is little plant resistance to the disease. Late summer no-till seedings seem to be more susceptible to the disease. Newly established seedlings are very susceptible to infection in the fall when the fungus is active. Plants are attacked rapidly by the pathogen and die the following spring. Plants established in the spring are more resistant to the pathogen and are not as severely damaged as are the younger plants. The fungus survives as hard, black structures (sclerotia) on or near the soil surface. In the fall, the sclerotia produce spores that cause infection. Plowing buries sclerotia, thus reducing inoculum and subsequent infection.

Resistance to *Aphanomyces* can be found in some of the newest varieties. *Aphanomyces eutiches* is a soilborne fungus with behavior and requirements similar to *Phytophthora*. It is a wet-soil seedling pathogen and can be expected to thrive under cool, waterlogged conditions. Resistance may be beneficial when growing alfalfa on poorly drained soils. More specific information about many alfalfa diseases is included in the current *Penn State Agronomy Guide*.

Crown and root rot complex is still a problem. Because of the complexity of the pathogens involved, resistance to this disease is not very high in any variety. Good management slows the progress of this disease. More specific information is included in the current *Penn State Agronomy Guide*.

Plant breeders develop alfalfa varieties by selecting from genetically diverse populations. Within such populations, individual plants may vary widely in their response to a particular disease or insect. Some may be highly resistant

and others very susceptible. A particular pest-resistance rating usually reflects the response of the majority of plants in the variety. In our trials, varieties with the most pest-resistance ratings of "moderate" or higher usually have shown better long-term performance.

Guidelines for Selecting Alfalfa Varieties

To select alfalfa varieties on the basis of the trial results, follow these suggestions:

1. Determine which of the trial sites most resembles your farm in terms of soil and growing season. Performance data of varieties at this site are likely to provide more relevant selection information.
2. Look at the performances of the varieties at both trial sites. Varieties that do equally well at both sites are probably adapted to a wider range of environmental conditions.
3. Performance data over several years can be very useful in selecting a variety since some varieties seem to decline with age more rapidly than others.
4. For long-term rotations, the most recent harvest-year data should receive major consideration. If you plan to harvest the alfalfa for three years or less, then high performance during early years should be given major consideration.
5. Disease- and pest-resistance ratings should be examined in relation to yield, especially if your area is known to have problems with alfalfa diseases and pests. For example, resistance to *Phytophthora* root rot may be exceptionally important on farms with moderately to poorly drained soils.

Table 1 lists the marketers of alfalfa varieties included in this report, as well as the trial table numbers in which the varieties appear. Also included are fall dormancy ratings and selected disease- and insect-resistance ratings. Tables 2 through 9 offer guidelines for assessing the production potential of various alfalfa varieties.

The tables in this report may be reproduced only in their entirety.

Table 1. Alfalfa varieties marketed in Pennsylvania and listed in this report.

Fall dormancy ratings of alfalfa range from 1 (very dormant) to 9 (having no dormancy). Varieties that are less fall dormant (higher numerical rating) regrow faster after harvest and exhibit greater growth in the fall compared to those varieties with greater fall dormancy (lower numerical rating).

BW = Bacterial Wilt, VW = Verticillium Wilt, FW = Fusarium Wilt, AN = Anthracnose, PRR = Phytophthora Root Rot, APH1 = Aphanomyces Race 1

The “Fall Dormancy” and “Pest-Resistance Ratings” in this table are from the National Alfalfa Alliance and/or the alfalfa variety breeder and have not been verified by Penn State.

Resistance Key (%): S = 0–5%; LR = 6–14%; MR = 15–30%; R = 31–50%; HR = 51% or greater. If the resistance rating for a variety is not listed, the information is not available.

Variety	Marketer ^a	Fall Dormancy	Pest-Resistance Ratings						Appears in Table(s)
			BW	VW	FW	AN	PRR	APH1	
4030	Preferred Seed	4	HR	HR	HR	HR	HR	HR	4, 8
6417	Garst	4	HR	HR	HR	HR	HR	HR	4, 8
4020MF	BrettYoung	4	HR	HR	HR	HR	HR	HR	3, 7
4A415	Mycogen	4	HR	HR	HR	HR	HR	HR	4, 8
4S417	Mycogen	4	HR	HR	HR	HR	HR	HR	3, 4, 6, 7, 8
54Q32	Pioneer Hi-Bred Int'l	4	HR	HR	HR	HR	HR	R	3, 7
55V48	Pioneer Hi-Bred Int'l	5	HR	R	HR	HR	HR	HR	2, 3, 6, 7
6305Q	Garst	3	HR	HR	HR	HR	HR	HR	3, 4, 7, 8
A 4535	Producer's Choice	4	HR	HR	HR	HR	HR	HR	3, 7
AMERISTAND 407TQ	P.L. Rohrer	4	HR	HR	HR	HR	HR	HR	2, 3, 5, 6, 7, 9
ARCHER III	P.L. Rohrer	5	HR	HR	HR	HR	HR	HR	3, 5, 7, 9
AV4211	AgVenture	4	HR	HR	HR	HR	HR	HR	2
CHARGER	Mid-Atlantic Seeds	5	HR	HR	HR	HR	HR	HR	2, 6
CORNERSTONE	Chemgro Seeds	4	HR	HR	HR	HR	HR	HR	3, 7
DG 4210	Crop Production Services	4	HR	HR	HR	HR	HR	HR	4, 5, 8, 9
DKA34-17	Dekalb	3	HR	HR	HR	HR	HR	HR	5, 9
DKA41-18 RR	Dekalb	4	HR	HR	HR	HR	HR	HR	5, 9
DKA43-13	Dekalb	5	HR	HR	HR	HR	HR	HR	2, 6
DKA50-18	Dekalb	5	HR	HR	HR	HR	HR	HR	2, 6
EVERLAST II	Ampac	4	HR	HR	HR	HR	HR	HR	3, 7
EZRA	Seedway	3	R	R	HR	HR	HR	—	2, 4, 6, 8
FSG 329	Seedway	3	HR	HR	HR	HR	HR	HR	5, 9
FSG 406	Seedway	4	R	R	HR	HR	HR	HR	3, 7
FSG 408DP	Seedway	4	HR	R	Hr	HR	HR	R	3, 7
FSG 420LH	Seedway	4	HR	HR	HR	HR	HR	HR	3, 7
FSG 528 SF	Seedway	5	HR	HR	HR	HR	HR	H	6
GEMSTONE	Chemgro	4	HR	HR	HR	HR	HR	HR	3, 7
GENOA	Syngenta Seeds	4	HR	HR	HR	HR	HR	HR	2, 6
GUNNER	CROPLAN	5	HR	HR	HR	HR	HR	HR	5, 9
HYBRI+JADE	Channel	4	HR	HR	HR	HR	HR	HR	5, 9
HYBRIFORCE-2400	Dairyland Seed	4	HR	HR	HR	HR	HR	HR	3, 4, 6, 7, 8
HYBRIFORCE-2420	Dairyland Seed	4	HR	HR	HR	HR	HR	HR	3, 4, 6, 7, 8
LANCER	Growmark FS	4	HR	HR	HR	HR	HR	HR	3, 7
MAGNUM 7*	Dairyland Seed	4	HR	HR	HR	HR	HR	HR	3

(Table 1 continued)

Variety	Marketer ^a	Fall Dormancy	Pest-Resistance Ratings						Appears in Table(s)
			BW	VW	FW	AN	PRR	APH1	
MILESTONE II	Chemgro Seeds	4	HR	HR	HR	HR	HR	HR	4, 8
N-R-GEE	Seedway	4	HR	HR	HR	R	R	—	2, 6, 5, 9
ONEIDA VR	Public	3	R	HR	HR	MR	MR	—	2, 3, 4, 5, 6, 7, 8, 9
PERSIST II	Doebler's	4	HR	HR	HR	HR	HR	HR	2, 5, 6, 9
PGI 557	Producer's Choice	5	HR	HR	HR	HR	HR	HR	3, 7
PHIRST EXTRA	Doebler's	4	HR	HR	HR	HR	HR	HR	4, 8
PILLAR	Doebler's	4	HR	HR	HR	HR	HR	HR	4, 8
PLUSS II	Doebler's	4	HR	HR	HR	HR	HR	HR	3, 4, 5, 7, 8, 9
POUNCE	Doebler's	5	HR	HR	HR	HR	HR	—	3, 7
PROFUSION-HX	King's AgriSeeds	4	HR	HR	HR	HR	HR	HR	8
PROLIFIC II	Doebler's	4	HR	HR	HR	HR	HR	HR	3, 5, 7, 9
RADIANCE HD*	Ampac Seed	4	HR	R	HR	HR	HR	HR	3, 7
RED FALCON BR	Blue River Hybrids	4	HR	HR	HR	HR	HR	HR	4
SENECA*	R M Seed	4	HR	HR	HR	HR	HR	HR	4, 5, 9
SHOCKWAVE	BrettYoung	4	HR	HR	HR	HR	HR	HR	4
SONIC*	NuTech Seed	4	HR	HR	HR	HR	HR	HR	3
STOCKPILE	BrettYoung	4	HR	HR	HR	HR	HR	HR	4
VELOCITY	NuTech Seed	4	HR	HR	HR	HR	HR	HR	6
VERNAL	Public	2	R	S	MR	S	S	S	2, 3, 4, 5, 6, 7, 8, 9
WL 343 HQ	Winfield Solutions CSP	4	HR	HR	HR	HR	HR	HR	2, 4, 6, 8
WL 354 HQ	Winfield Solutions CSP	4	HR	HR	HR	HR	HR	HR	5, 9
WL 363 HQ	Winfield Solutions CSP	5	HR	HR	HR	HR	HR	HR	2, 4, 6, 8

a. Marketers' contact information is listed on the next page.

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

Alfalfa marketers listed in this report—location, phone number, and website:

AgVenture Inc.

Kentland, IN 47951
Phone: 888-999-0859
Web: www.agventure.com

Allied Seed

Macon, MO 63552
Phone: 800-880-8127
Web: www.alliedseed.com

Ampac Seed Company

Tangent, OR 97389
Web: www.ampacseed.com

Blue River Hybrids

Kelley, Iowa 50134
Phone: 800-370-7979
Web: www.blueriverorgseed.com

BrettYoung Seeds

Winnipeg, MB M3V 1L5, Canada
Phone: 204-261-7932
Web: www.byseeds.com

Chemgro Seeds

E. Petersburg, PA 17520
Phone: 800-346-4769
Web: www.chemgro.com

Channel Seed

St. Louis, MO 63167
Phone: 314-694-1000
web:www.channel.com

CROPLAN

Shoreview, MN 55126
Phone: 888-295-3011
Web: www.croplangenetics.com

Crop Production Services

Holtwood, PA 17532
Phone: 707-284-5350
Web: www.cropproductionservices.com

Dairyland Seed Company

West Bend, WI
Phone: 800-236-0163
Web: www.dairylandseed.com

Dekalb

St. Louis, MO 63167
Phone : 800-768-6387
Web: www.asgrowanddekalb.com

Doebler's

Jersey Shore, PA 17740
Phone: 570-753-3210
Web: www.doebler.com

Growmark FS

York, PA 17402
Phone: 800-338-4769
Web: home.gromarkfs.com

Hytest Seeds

Dover, PA 17315
Phone: 717-870-0351

King's AgriSeeds

Ronks, PA 17572
Phone: 866-687-6224
Web: Kingsagriseeds.com

Mid-Atlantic Seeds

York, PA 17403
Phone: 717-852-8894

Mycogen Seeds

Export, PA 15632
Phone: 724-468-6533
Web: www.dowagro.com/mycogen

NuTech Seed

Ames, IA 50010
Phone: 515-232-1997
Web: www.nutechseed.com

P.L. Rohrer & Bro. Inc.

Smoketown, PA 17576
Phone: 717-299-2571
Web: www.rohrerseeds.com

Pioneer Hi-Bred Int'l Inc.

Mount Joy, PA 17552
Phone: 717-653-5605
Web: pioneer.com

Preferred Seed Company

Buffalo, NY 14227
Phone: 716-895-7333
Web: preferredseed.com

Producer's Choice

Jordan, MN 55352
Phone: 877-560-5181
Web: www.producerschoiceseed.com

R M Seed

Charter Oak, IA 51439
Phone:

Seedway

Mifflinburg, PA
Phone: 800-338-2137
Web: seedway.com

Syngenta Seeds

Minnetonka, MN 55305
Phone: 800-445-0956
Web: www.syngentaseeds.com

T.A. Seeds

Jersey Shore, PA 17740
Phone: 570-753-5503
Web: www.taseeds.com

Winfield Solutions CSP

Dover, PA
Phone: 717-870-0351

The tables in this report may be reproduced only in their entirety.

Table 2. 2008 alfalfa variety trial—Rock Springs.

Variety	2012 Yield	2011 Yield	2010 Yield	2009 Yield	Four-year Average	Stand 9/24
GENOA	7.53	7.33	8.54	7.29	7.73	76.7
PERSIST II*	7.08	7.11	8.81	7.53	7.69	85.5
55V48	7.48	7.41	8.46	7.20	7.69	89.2
AMERISTAND 407TQ	7.38	7.33	8.49	7.05	7.64	79.0
DKA43-13	7.29	7.39	8.50	6.94	7.58	84.2
AV4211	7.03	6.94	8.11	7.52	7.48	82.4
DKA50-18	7.19	7.12	8.33	6.87	7.42	79.3
WL 363 HQ	7.03	7.26	8.27	6.97	7.41	80.6
WL 343 HQ	6.96	6.93	8.38	6.91	7.41	83.6
VELOCITY	7.33	6.71	8.42	7.11	7.40	82.0
CHARGER	7.02	7.08	8.26	6.97	7.36	81.1
EZRA*	6.32	6.75	8.03	7.42	7.15	74.8
5312	6.44	6.20	7.39	7.04	6.82	76.8
ONEIDA VR	5.98	5.91	6.92	6.99	6.46	77.0
N-R-GEE	5.85	6.00	6.74	6.38	6.33	70.3
VERNAL	4.87	5.08	5.50	6.21	5.44	61.3
GRAND MEAN	6.82	6.17	7.96	7.01	7.20	79.0
CV (%)	9.54	6.57	4.70	3.26	6.70	8.6
LSD (p = 0.05)	0.91	0.63	0.53	0.32	0.67	4.0

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded August 15, 2008.
- Yields (tons-per-acre DM basis).
- Yields indicated represent the sum of four cuttings each year.
- Stand score based on a scale from 1 to 100. A 100 is considered a perfect stand.
- Grand mean, CV, and LSD values represent 18 total entries.
- Means are LSMEANS derived from statistical analysis. Therefore, multiple-year averages may not be the arithmetic means of the years involved.
- Varieties are listed by rank for four-year average yield.

The tables in this report may be reproduced only in their entirety.

Table 3. 2009 alfalfa variety trial—Rock Springs.

Variety	2012 Yield	2011 Yield	2010 Yield	Three-year Average	Stand 9/16
MAGNUM 7*	7.38	7.58	8.35	7.81	83.1
SONIC*	7.31	7.44	8.63	7.76	85.1
ARCHER III	7.31	7.76	8.05	7.76	86.7
6422Q	7.51	7.69	8.05	7.74	85.0
4020MF*	7.18	7.54	8.27	7.68	82.6
GEMSTONE*	7.41	7.77	7.76	7.68	84.9
PLUSS II	7.12	7.20	8.08	7.48	82.7
HYBRIFORCE-2400	7.06	7.36	8.01	7.47	83.1
4S417	7.05	7.35	7.96	7.45	83.1
AMERSTAND 407TQ	6.86	7.32	7.86	7.35	84.0
CORNERSTONE	6.80	7.28	7.70	7.25	84.0
54Q32	7.12	7.15	7.61	7.25	82.4
RADIANT HD*	6.68	6.76	8.17	7.19	82.5
PGI 557*	6.89	6.82	7.46	7.09	84.5
REBOUND 5.0	6.84	6.99	7.25	7.06	82.7
55V48	6.32	7.23	7.42	7.01	85.2
GA-505	6.61	7.16	7.15	6.97	85.5
KINGFISHER 243	6.59	7.01	7.26	6.97	82.5
A 4535	6.68	6.88	7.35	6.94	83.5
FSG 408DP	6.56	6.97	7.21	6.93	84.5
EVERLAST II	6.54	6.88	7.52	6.92	82.1
AMERSTAND 403T PLUS	6.57	6.90	7.17	6.86	84.0
PROLIFIC II	6.42	6.87	7.31	6.85	83.3
HYBRIFORCE-2420/wet*	6.87	6.63	6.91	6.81	80.0
5312	6.27	6.87	6.99	6.67	83.6
FSG 406	6.26	6.69	6.70	6.57	84.3
ONEIDA VR	6.05	6.32	6.88	6.35	81.0
POUNCE	5.59	6.08	6.52	6.11	76.6
VERNAL	4.20	5.20	5.83	5.05	59.9
GRAND MEAN	6.55	6.93	7.42	6.97	82.5
CV (%)	8.95	8.34	7.24	7.57	4.35
LSD (p = 0.05)	0.80	0.81	0.75	0.72	4.94

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded April 27, 2009.
- Yields (tons-per-acre DM basis).
- Yields indicated represent the sum of four cuttings each year.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 42 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

The tables in this report may be reproduced only in their entirety.

Table 4. 2010 alfalfa variety trial—Rock Springs.

Variety	2012 Yield	2011 Yield	Two-year Average	Stand 9/17
SENECA*	7.96	7.36	7.66	89.4
MAGNUM 7-WET*	8.06	7.02	7.54	88.0
PERSIST III*	7.55	7.23	7.39	87.7
STOCKPILE*	7.70	7.04	7.38	90.6
SHOCKWAVE*	7.96	6.74	7.36	87.8
4030*	7.66	6.87	7.27	90.1
MILESTONE II*	7.77	6.68	7.23	90.8
6305Q	8.03	6.41	7.22	87.5
HYBRIFORCE-2420*	7.57	6.81	7.19	89.5
PLUSS II	7.44	6.68	7.06	90.5
LS 504	7.54	6.56	7.05	87.3
WL 363 HQ	7.74	6.35	7.05	88.4
DG 4210	7.38	6.51	6.95	88.7
HYBRIFORCE-2400	7.29	6.58	6.94	89.8
RED FALCON BR	7.23	6.52	6.88	88.9
4S417	7.26	6.43	6.84	90.5
WL 343 HQ	7.53	6.09	6.80	90.6
PILLAR	7.15	6.44	6.80	89.2
4A415	7.19	6.35	6.76	88.0
EZRA	7.09	6.36	6.73	89.4
6417	7.06	6.37	6.72	90.4
PHIRST EXTRA	7.04	6.28	6.66	86.9
NY0947	6.91	5.97	6.43	88.8
NY0946	6.78	6.01	6.39	87.0
5312	6.88	5.86	6.37	85.4
ONEIDA VR	6.42	5.66	6.04	86.6
VERNAL	5.63	5.39	5.50	77.0
GRAND MEAN	7.37	6.50	6.94	88.5
CV (%)	6.34	8.50	6.36	9.27
LSD (p = 0.05)	0.65	0.77	0.72	2.81

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation
LSD = least significant difference

- Seeded April 22, 2010.
- Yields (tons-per-acre DM basis).
- Yields indicated represent the sum of four cuttings each year.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 32 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

The tables in this report may be reproduced only in their entirety.

Table 5. 2011 alfalfa variety trial—Rock Springs.

Variety	2012 Yield	Stand 9/17
SENECA	7.04	90.7
PROFILIC II	6.80	90.2
WL 354 HQ	6.66	90.6
LS 803	6.54	90.7
HYBRI+JADE	6.44	89.8
FSG 329	6.39	89.3
5312	6.34	89.1
GUNNER	6.26	92.0
ARCHER III	6.23	89.6
PERSIST II	6.22	89.2
DG 4210	6.21	89.9
PLUSS II	6.20	90.6
RENEW	6.18	84.5
DKA 34-17 RR	6.16	91.5
AMERISTAND 407TQ	6.11	90.3
ONEIDA VR	5.99	90.0
DKA 41-18 RR	5.87	90.7
N-R-GEE	5.63	87.8
VERNAL	5.33	70.4
GRAND MEAN	6.39	89.4
CV (%)	15.8	3.4
LSD (p = 0.05)	1.42	4.3

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation
LSD = least significant difference

- Seeded May 7, 2011.
- Yields indicated represent the sum of four cuttings each year on a tons-per-acre DM basis.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 36 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

The tables in this report may be reproduced only in their entirety.

Table 6. 2008 alfalfa variety trial—Landisville.

Variety	2012 Yield	2011 Yield	2010 Yield	2009 Yield	Four-year Average	Stand 10/19
HYBRIFORCE-2400*	7.57	9.84	11.33	10.05	9.66	82.8
VELOCITY	7.68	9.29	10.47	9.68	9.46	78.9
PERSIST II*	7.61	8.66	9.67	9.43	9.04	84.1
DKA 43-13	7.19	8.59	10.43	9.38	9.01	80.8
DKA 50-18	7.12	8.98	10.55	8.98	8.94	82.0
AMERISTAND 407TQ	7.12	9.06	10.09	9.11	8.84	78.8
WL 343 HQ	7.17	8.51	10.13	8.95	8.72	81.2
CHARGER	6.95	8.52	10.36	8.99	8.68	79.2
EZRA (NY0240)	6.57	8.42	10.33	9.42	8.64	76.9
WL 363 HQ	6.83	8.77	10.17	8.79	8.57	75.7
HYBRIFORCE-2420 WET	6.44	8.11	10.16	9.29	8.48	81.2
GENOA	6.52	8.13	10.11	9.48	8.48	69.2
4S417*	6.53	8.03	9.84	9.28	8.46	82.8
55V48	6.82	7.53	9.90	8.90	8.14	74.8
5312	6.40	8.30	9.55	8.42	8.05	78.2
N-R-GEE	5.42	7.50	8.85	7.86	7.45	81.3
ONEIDA VR	5.29	6.37	8.51	8.41	6.94	75.3
VERNAL	5.12	6.82	7.40	7.01	6.67	73.2
GRAND MEAN	6.69	8.32	9.89	8.97	8.48	78.2
CV (%)	16.8	11.5	8.8	7.1	10.2	13.8
LSD (p = 0.05)	0.58	1.34	1.21	0.89	1.21	4.12

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded August 22, 2008.
- Yields indicated represent the sum of four cuttings each year on a tons-per-acre DM basis.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 18 total entries.
- Varieties are listed by rank for four-year average yield.
- Means are LSMEANS derived from statistical analysis. Therefore, multiple-year averages may not be the arithmetic means of years involved.

The tables in this report may be reproduced only in their entirety.

Table 7. 2009 alfalfa variety trial—Landisville.

Variety	2012 Yield	2011 Yield	2010 Yield	Three-year Average	Stand 10/19
GEMSTONE*	6.98	9.26	10.63	8.95	84.8
KF402H*	6.76	9.02	10.70	8.79	85.5
ARCHER III	6.78	8.97	10.61	8.77	82.5
6422Q	6.82	9.22	10.02	8.65	84.3
AMERSTAND 407TQ	6.47	8.83	9.91	8.37	81.3
LS 605	6.45	8.60	10.08	8.35	84.3
KINGFISHER 243	6.30	8.33	10.06	8.20	83.8
55V48	6.35	8.34	10.00	8.19	85.8
PGI 557*	6.95	8.12	9.64	8.18	82.8
HYBRIFORCE-2400*	5.92	8.17	10.10	8.07	86.8
4020MF*	6.15	8.15	9.41	7.89	84.3
FSG 408DP	6.05	8.09	9.56	7.84	84.8
PROLIFIC II	6.20	8.14	9.18	7.82	82.5
54Q32*	6.18	8.11	9.06	7.76	84.3
REBOUND 5.0	5.91	8.21	9.17	7.73	83.0
ONEIDA VR	5.90	7.89	9.38	7.68	82.0
HYBRIFORCE-2420/WET*	5.77	7.58	9.67	7.66	82.0
EVERLAST II	5.88	7.66	9.27	7.61	84.0
NY0553	5.92	7.91	8.96	7.55	85.3
A 4535	5.85	8.00	8.80	7.51	81.8
FSG 406	6.03	7.83	8.64	7.47	85.0
5312	5.75	7.94	8.72	7.44	81.0
CORNERSTONE	5.97	7.66	8.72	7.42	85.8
AMERSTAND 403T PLUS	5.91	7.25	8.29	7.15	82.3
44H372	5.54	6.96	8.19	6.85	78.8
FSG 420LH	5.39	6.95	8.04	6.76	82.5
POUNCE	5.36	6.91	7.97	6.72	83.8
VERNAL	4.83	6.60	7.78	6.38	73.8
GRAND MEAN	6.07	8.07	9.36	7.80	83.4
CV (%)	20.8	13.0	13.0	14.9	4.5
LSD (p = 0.05)	1.78	1.48	1.71	1.64	5.24

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded April 24, 2009.
- Yields indicated represent the sum of four cuttings each year on a tons-per-acre DM basis.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 44 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

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Table 8. 2010 alfalfa variety trial—Landisville.

Variety	2012 Yield	2011 Yield	Two-year Average	Stand 10/19
4030*	8.56	10.24	9.41	90.6
WL 363 HQ	7.89	9.96	8.95	86.7
DG 4210*	7.89	9.64	8.79	89.3
MILESTONE II	7.34	9.93	8.65	85.6
PILLAR	7.30	9.62	8.48	84.1
PHIRST EXTRA	7.54	9.37	8.44	90.3
HYBRIFORCE-2400	7.41	9.23	8.33	90.7
EZRA	7.23	9.32	8.29	89.0
PROFUSION-HX*	7.45	8.95	8.21	90.2
PLUSS II	6.91	9.12	8.01	89.2
WL 343 HQ*	7.12	8.71	7.92	83.2
6417	6.84	8.30	7.57	90.2
HYBRIFORCE-2420*	6.86	8.29	7.57	89.2
6305Q*	6.66	8.41	7.53	86.1
4A415*	6.69	8.14	7.41	90.8
ONEIDA VR	6.13	8.38	7.24	88.9
VERNAL	5.38	7.99	6.68	80.7
GRAND MEAN	7.14	9.06	8.10	88.3
CV (%)	13.32	11.93	12.08	3.7
LSD (p = 0.05)	1.33	1.51	1.37	4.6

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded April 20, 2010.
- Yields indicated represent the sum of four cuttings each year on a tons-per-acre DM basis.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 26 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

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Table 9. 2011 alfalfa variety trial—Landisville.

Variety	2012 Yield	Stand 10/19
SENECA*	8.49	95.8
FSG 329*	8.40	95.6
PROFILIC II	8.15	95.3
GUNNER	8.11	95.2
ARCHER III	7.94	94.8
DG 4210	7.73	95.6
HYBRI-JADE*	7.58	95.6
DKA 34-17 RR	7.50	94.1
VERNAL	7.45	92.6
PERSIST II	7.44	94.9
AMERISTAND 407TQ	7.36	94.9
PLUSS II	7.35	95.0
WL 354 HQ*	7.33	94.5
DKA 41-18 RR	7.27	93.5
N-R-GEE	7.13	93.0
ONEIDA VR	6.79	95.1
GRAND MEAN	7.76	95.0
CV (%)	13.21	11.98
LSD (p = 0.05)	1.44	2.63

*Variety tested with experimental seed that may or may not give performance similar to commercially available seed.

CV = coefficient of variation

LSD = least significant difference

- Seeded May 10, 2011.
- Yields indicated represent the sum of four cuttings each year on a tons-per-acre DM basis.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Grand mean, CV, and LSD values represent 28 total entries.
- Entries are ranked in order of decreasing yield based on the three-year average.
- Means are LSMEANS derived from statistical analysis. Therefore, season or multiple-year totals may not be the arithmetic sum of individual cuts or years, respectively.

COOL-SEASON GRASSES

Perennial Cool-Season Trial

Many farmers in Pennsylvania could benefit from including some cool-season grasses as an integral part of their forage programs. The following tables summarize the yield potential of many perennial grass varieties in our research trials at the Russell E. Larson Research Center at Rock Springs.

Our soil fertility program is designed around maintenance applications of phosphorus and potash to meet the soil test requirements. Seventy pounds of available nitrogen is applied in early April with an additional 50 pounds applied after each harvest except the last one.

The first cutting in the perennial cool-season forage grass trials is made when

an individual variety reaches mid- to late boot. Subsequent harvests are then made at intervals of 35 to 40 days, with the exception of the final harvest, when all plots are harvested on the same day. All plots are harvested four times throughout the growing season, weather permitting, except in the establishment year.

Although production for each cutting in a given year varies among species, most varieties produce one-third to one-half of the total annual production in the first cut. Yields are not greatly reduced if a three-cut system is used. Quality will be increased by early and frequent cutting. Choose a species that fits the farm's capabilities and the operator's management scheme.

The tables in this report may be reproduced only in their entirety.

Table 10. Cool-season grass varieties marketed in Pennsylvania and listed in this report.

Species/Variety	Ploidy/Species	Marketer^a	Appears in Table No.
Bromegrass			
Hakari	Brome, Alaska	DLF International	11
Saratoga	Brome, Smooth	Public	11
Fescue			
BarElite	Fescue, Tall	King's AgriSeeds	11
Kentucky 31 E+	Fescue, Tall	Public	11
Kentucky 31 E-	Fescue, Tall	Public	11
Kentucky 32	Fescue, Tall	Oregro	11
Pradel	Fescue	Public	11
Festulolium			
Spring Green	Festulolium	Public	11
Sweet Tart	Festulolium	Public	11
Orchardgrass			
Dividend VL			11
Pennlate		P.L. Rohrer	11
Potomac		P.L. Rohrer	11
Tucker		Oregro	11
Ryegrass			
Boost	Tetraploid Perennial	Oregro	11
Calibra	Tetraploid Perennial	DLF	11
Linn	Diploid Perennial	Public	11
Polim	Tetraploid Perennial	DLF International	11
Timothy			
Tuuka		P.L. Rohrer	11

a. Forage grass marketers listed in this report—location, phone number, and website:

DLF International Seeds

Halsey, OR 97348
 Phone: 800-445-2251
 Web: www.intlseed.com

Pennington Seed

Madison, GA 30650
 Phone: 800-285-7333
 Web: www.penningtonseed.com

King's AgriSeeds

Ronks, PA 17572
 Phone: 717-687-6224
 Web: www.kingsagriseeds.com

P.L. Rohrer & Bro. Inc.

Smoketown, PA 17576
 Phone: 717-299-2571
 Web: www.rohrerseeds.com

Oregro Seeds Inc.

Albany, OR 97322
 Phone: 541-258-1001
 Web: www.oregroseeds.com

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Table 11. 2010 cool-season grass variety trial—Rock Springs.

Species/Variety	Ploidy/Species	First Cut Date ^a	2012 Yield	2011 Yield	Two-year Average	Stand 10/25	30-hr NDFd
Orchardgrass							
	Dividend VL	5/10	6.03	5.10	5.57	83.5	52.5
	Potomac	5/10	5.21	5.69	5.45	90.0	51.5
	Pennlate	5/10	5.67	5.06	5.36	88.3	51.8
	Tucker	5/10	4.68	4.99	4.84	90.0	51.4
	GRAND MEAN		5.28	5.21	5.26	86.6	51.8
	CV (%)		11.5	8.8	8.3	3.7	
	LSD (p = 0.05)		0.89	0.64	0.64	4.7	
Ryegrass							
	Boost	5/17	3.91	3.91	3.91	97.5	52.6
	Polim	5/17	3.72	3.86	3.79	97.3	58.0
	Calibra	5/17	3.74	3.64	3.69	97.5	57.2
	Linn	5/17	2.77	2.71	2.74	95.3	55.2
	GRAND MEAN		3.36	3.53	3.46	96.5	55.7
	CV (%)		12.4	10.5	10.1	3.3	
	LSD (p = 0.05)		0.76	0.54	0.51	ns	
Tall Fescue							
	KY 31 E+	5/10	6.16	6.86	6.51	92.8	49.6
	Kentucky 32	5/10	6.13	6.27	6.20	95.8	49.4
	BarElite	5/10	5.51	5.88	5.70	95.0	51.0
	KY 31 E-	5/10	5.28	5.97	5.63	96.3	49.1
	GRAND MEAN		5.67	6.25	5.88	94.1	49.8
	CV (%)		13.6	34.9	10.8	2.3	
	LSD (p = 0.05)		1.16	2.98	0.92	3.1	
Brome							
	Hakari	5/10	4.31	4.53	4.42	82.5	47.8
	BARPAL 16	5/10	4.16	2.55	3.35	80.5	50.5
	GRAND MEAN		4.12	3.54	3.91	84.8	49.2
	CV (%)		16.2	10.5	10.8	2.8	
	LSD (p = 0.05)		1.06	0.54	0.68	3.7	
Other							
	Pradel	5/17	4.32	4.15	4.24	92.8	48.3
	Spring Green	5/17	4.24	3.90	4.07	88.5	55.0
	Climax	5/17	3.57	3.78	3.68	88.8	51.2
	Sweet Tart	5/17	2.96	2.96	2.96	77.5	51.2
	GRAND MEAN		3.77	3.70	3.74	86.9	51.4
	CV (%)		12.5	10.5	13.1	9.8	
	LSD (p = 0.05)		1.11	0.54	0.78	13.7	
Overall							
	GRAND MEAN		4.26	4.85	4.67	90.9	52
	CV (%)		20.1	13.1	15.7	3.9	
	LSD (p = 0.05)		1.30	0.89	1.03	5.0	

a. Refers to the date when the first cutting was made in 2012. First cutting was made at late boot to early heading.

CV = coefficient of variation

LSD = least significant difference

- Seeded April 21, 2010.
- Yields indicated represent the sum of four cuttings on a tons-per-acre DM basis.
- Grand mean, CV, and LSD values represent 34 total entries.
- Variety means are derived from LSMEANS.

New for 2011–2012: Short-Lived Cool-Season Grass Trial

In fall 2011, a Short Lived Cool-Season Grass Trial was seeded at Rock Springs. The trial was planted on September 19, 2011. There were two different management treatments, a single-cut system and a multi-cut system. The cereal grasses were cut using the single-cut system and the annual ryegrasses were cut multiple times. With the multi-cut system, grasses were cut about every three weeks and the plots were cut three different times based on maturity. Cuttings of individual varieties took place when a variety reached late boot stage. First cutting started on April 25 and concluded on May 5, second cutting concluded on May 24, and third cutting concluding on June 20.

Our soil fertility program is designed around maintenance applications of phosphorus and potash to meet the soil test requirements. Plots will receive 30 units in the fall, 100 units of nitrogen at green-up in the spring, and, for the multi-cut system, 50 units after each cutting.

See the current Penn State Agronomy Guide for specific recommendations about establishment, fertilization, and other management considerations.

Table 10 and Table 12 list cool-season grass varieties in our testing program that are currently marketed in Pennsylvania. Tables 11 and Table 13 offers guidelines for assessing the production potential of various cool-season grass varieties.

The tables in this report may be reproduced only in their entirety.

Table 12. Short-Lived grass varieties marketed in Pennsylvania and listed in this report.

Species/Variety	Ploidy/Species	Marketer ^a	Appears in Table
Annual Ryegrass			
Bar LMF 9740	Annual Ryegrass	Barenbrug USA	13
Bardelta	Italian Ryegrass	Barenbrug USA	13
Barherta	Italian Ryegrass	Barenbrug USA	13
Barherta	Italian Ryegrass	Barenbrug USA	13
Barmultra II	Italian Ryegrass	Barenbrug USA	13
Bruiser	Annual Ryegrass/Diploid	Ampac	13
Barextra	Italian Ryegrass	Barenbrug USA	13
KB Royal ARG	Annual Ryegrass	King's AgriSeeds	13
Marshall	Annual Ryegrass	King's AgriSeeds	13
FLX 1995	Annual Ryegrass	Ampac	13
Unavolta	Italian Ryegrass	Barenbrug USA	13
Mol	Annual Ryegrass	King's AgriSeeds	13
Feast II	Italian Ryegrass	Ampac	13
KB Supreme	Annual Ryegrass	KB Seed Solutions	13
Tillage RootMax	Annual Ryegrass	Cover Crop Solutions	13
Blends			
Production Builder	Italian Ryegrass/Clovers	King's AgriSeeds	13
Tritcale Plus	Triticale (815@66%+33% ARG)	King's AgriSeeds	13
Bristol	Radish/Rootmax	Cover Crop Solutions	13
Indy Blend	Radish/Rootmax/Crimson Clover	Cover Crop Solutions	13
Cereals			
Trical 141	Triticale	Syngenta	13
Tical 336	Triticale	Syngenta	13
Trical 815	Triticale	Syngenta	13
W1566	Wheat	Syngenta	13
Aroostook	Rye	Public	13
FS 950	Barley	Seedway	13
FS 501	Barley	Seedway	13

^aForage grass marketers listed in this report— location, phone number, and website:

Ampac Seed Company
32727 Hwy. 99E
PO Box 318
Tangent, OR 97389
Web: www.ampacseed.com

Barenbrug USA
36030 Tennessee Road
Albany, OR 97321
Web: www.barenbrug.com

Cover Crop Solutions
509 West Penn Ave., Suite 10
Robesonia, PA 19551
Phone: 1-800-767-9441
Web: www.covercropsolutions.com

KB Seed Solutions
25432 Rowland Road
Harrisburg, OR 97446
Phone: 866-716-7333
Web: www.kbseedsolutions.com

King's AgriSeeds
Ronks, PA 17572
Phone: 717-687-6224
Web: www.kingsagriseeds.com

Seedway
275 North Eighth Street
Mifflinburg, PA 17844
Phone: 800-338-2137
Fax: 570-966-9413
Web: www.seedway.com

Syngenta
PO Box 18300
Greensboro, NC 27419.
Phone:1-866-796-4368
Web: www.syngenta.com

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Table 13. 2011–2012 Short-Lived Trial—Rock Springs.

Species	Variety	DM Yield (tons/acre)				First Cutting				Avg. of First and Second Cuttings			
		Cut 1	Cut 2	Cut 3	Total	CP (%)	ADF (%)	NDF (%)	30-Hr. NDFd	CP (%)	ADF (%)	NDF (%)	30-Hr. NDFd
Annual Ryegrass													
Barherta	Italian Ryegrass	1.85	2.39	1.83	6.08	20.9	24.1	39.7	56.7	14.8	30.7	53.7	51.4
Barmultra II	Italian Ryegrass	1.83	2.40	1.79	6.02	22.1	26.8	41.4	54.0	15.3	31.4	53.9	52.1
Bruiser	Ryegrass/Diploid	2.11	2.31	1.54	5.96	22.4	23.7	39.2	55.3	15.0	31.5	54.4	49.1
Barextra	Italian Ryegrass	1.91	2.19	1.72	5.82	20.7	24.1	40.4	55.2	16.0	28.9	50.7	54.4
KB Royal ARG	Ryegrass	2.30	2.07	1.39	5.76	22.0	24.6	40.0	52.3	15.0	31.6	54.7	49.5
Bar LMF 9740	Annual Ryegrass	1.70	2.14	1.90	5.73	20.7	27.7	42.9	51.3	15.6	28.9	50.8	53.2
Marshall	Ryegrass	1.86	2.29	1.57	5.71	22.7	26.2	41.7	54.6	15.1	32.4	55.6	50.6
Bardelta	Italian Ryegrass	1.82	2.10	1.70	5.63	20.6	25.4	41.8	55.6	14.2	30.7	53.7	51.4
FLX 1995	Ryegrass/Tetraploid	1.73	2.23	1.67	5.63	22.6	25.3	41.0	54.8	16.3	30.6	52.8	52.1
Unavolta	Italian Ryegrass	1.51	2.22	1.81	5.54	21.2	25.6	42.5	54.1	15.3	30.1	53.4	50.5
Mol	Ryegrass/Diploid	2.09	1.97	1.46	5.52	21.0	25.9	41.5	51.6	15.3	30.2	52.8	52.2
Feast II	Italian Ryegrass	1.73	2.10	1.53	5.36	22.1	28.8	43.9	51.9	15.9	29.7	51.8	56.3
KB Supreme	Ryegrass/Diploid	1.61	2.05	1.46	5.13	22.6	25.3	40.6	54.8	15.0	31.9	55.2	51.1
Tillage RootMax	Ryegrass/Diploid	1.87	1.92	1.28	5.07	22.8	27.3	42.2	52.0	17.1	28.2	50.1	54.0
	MEAN	1.95	2.13	1.59	5.62	21.7	26.2	41.6	53.5	15.6	30.5	53.1	52.1
	CV (%)	18.3	8.1	10.6	7.4								
	LSD (p = 0.05)	0.58	0.24	0.29	0.58								
Blends													
Production Builder	Italian Ryegrass/ Clovers	2.56	2.02	1.95	6.53	19.8	26.7	41.0	49.1	16.6	30.5	54.1	51.1
Tritcale Plus	Triticale (815@66%+33% ARG)	3.20	1.98	1.35	6.53	17.3	24.9	42.0	45.2	15.6	32.3	56.5	46.3
Bristol	Radish/Rootmax	1.61	2.52	1.46	5.59	25.1	23.2	37.6	56.5	16.1	30.1	52.5	53.1
Indy Blend	Radish/Rootmax/ Crimson Clover	2.18	1.96	1.31	5.45	23.0	24.3	38.4	53.4	16.3	29.5	52.1	53.4
	MEAN	2.39	2.12	1.52	6.03	21.3	24.8	39.8	51.0	16.2	30.6	53.8	51.0
	CV (%)	15.1	16.4	11.7	8.8								
	LSD (p = 0.05)	0.61	0.55	0.29	0.87								
Cereals													
Trical 141	Triticale	3.24			3.24	14.9	31.6	51.1	48.3				
Tical 336	Triticale	3.24			3.24	15.3	30.8	50.9	47.9				
Trical 815	Triticale	2.91			2.91	16.9	28.4	48.2	50.1				
W1566	Wheat	2.55			2.55	16.5	26.7	46.3	44.3				
Aroostook	Rye	2.35			2.35	16.3	32.2	53.7	47.1				
FS 950	Barley	2.26			2.26	15.5	27.3	47.1	48.5				
FS 501	Barley	1.61			1.61	17.5	28.1	47.5	55.8				
	MEAN	2.60			2.60	16.1	29.3	49.2	48.9				
	CV (%)	20			20								
	LSD (p = 0.05)	0.92			0.92								

(Table 13 continued)

Species	Variety	DM Yield (tons/acre)				First Cutting				Avg. of First and Second Cuttings			
		Cut 1	Cut 2	Cut 3	Total	CP (%)	ADF (%)	NDF (%)	30-Hr. NDFd	CP (%)	ADF (%)	NDF (%)	30-Hr. NDFd
Overall													
MEAN		2.11	2.13	1.56	4.73	21.7	26.3	39.3	51.7				
CV (%)		19.3	10.6	11.15	8.19								
LSD (p = 0.05)		0.66	0.3	0.29	0.7								

CV = coefficient of variation

LSD = least significant difference

- Planted September 19, 2011.
- Harvest was based on maturity and took place at late boot stage. First cut started on April 25, 2012, and continued until May 4.
- Second cutting concluded on May 24, 2012, and third cutting concluded on June 20.
- Rankings are based on total yields.



Penn State
Extension

2012 FORAGE TRIALS REPORT

Prepared by Chris Houser, research support assistant; W. Scott Harkcom, farm manager; and Marvin H. Hall, professor of forage management.

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An **OUTREACH** program of the College of Agricultural Sciences

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

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Produced by Ag Communications and Marketing

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CODE # UC068 1.5M12/12acg3391