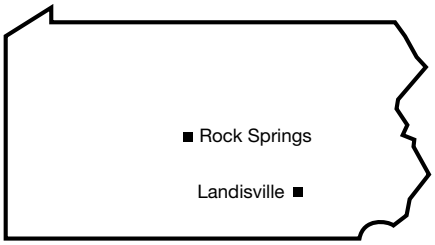
2007 Forage Trials Report

CONTENTS

SUMMARY

The *2007 Forage Trials Report* summarizes performance data collected from ongoing forage trials at three 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. Also included are the results of grazing trials established at the Haller Grazing Research Farm near State College. Both cool-season (forage) grasses and legumes are included in the grazing trial.



2007 Forage Growing Season

Highly variable weather is becoming the norm across Pennsylvania, with some regions suffering again this year from very dry conditions that produced very little but high-quality forage while other regions had consistent rains throughout the growing season. This fall brought more rains and warmer weather than normal, which pushed the growing season very late. Some producers were taking a sixth harvest in late October or early November. Excellent hay-making weather this year, although sporadic in some areas, was reflected by the high number of hay samples (18 more than in 2005 and 38 more than in 2004) entered in the 2007 Pennsylvania Forage and Grassland Council's Hay Show at Ag Progress Days. The trend continues that as rainfall decreases the number of samples entered in the hay show increases. The average quality of the hay show samples was CP 17.5 percent, ADF 33 percent, NDF 47 percent, and RFV 133.

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 are also 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 13). 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, 12, and 14. Only varieties currently being marketed in Pennsylvania appear in the tables. Although the trials contain up to 49 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. They will be published in the *Forage Trials Report* only if the newly named variety 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 and is given following harvest in the fall. The stand score is reported on a scale from 1 to 100, with 100 considered to be 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 15 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 unmeasurable variations in soil fertility, soil drainage, and other environmental factors contribute to increased CV levels.

Figure 1. 2007 Precipitation at Rock Springs

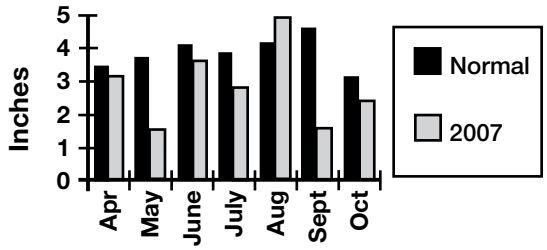


Figure 2. 2007 Precipitation at Landisville

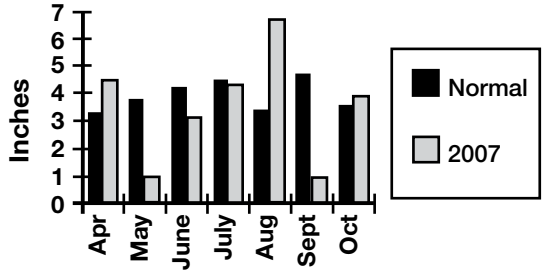


Figure 3. 2006 Precipitation at Rock Springs

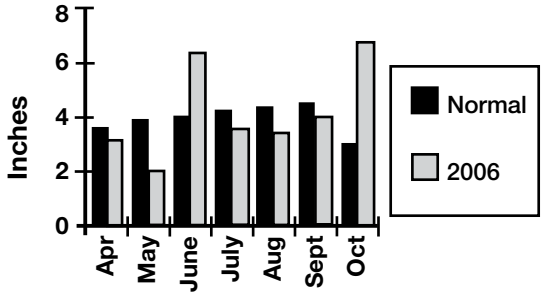


Figure 4. 2006 Precipitation at Landisville

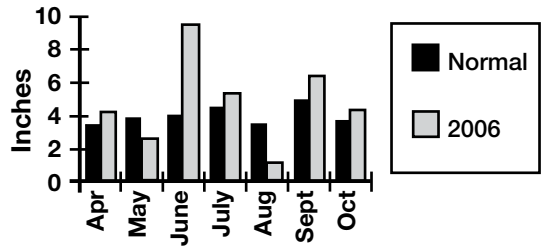


Figure 5. 2005 Precipitation at Rock Springs

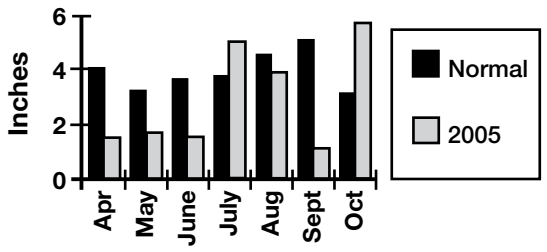


Figure 6. 2005 Precipitation at Landisville

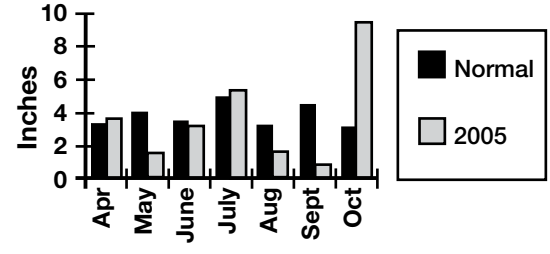


Figure 7. 2004 Precipitation at Rock Springs

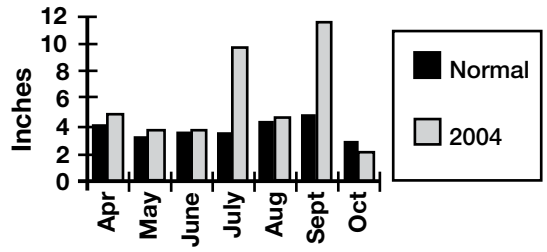
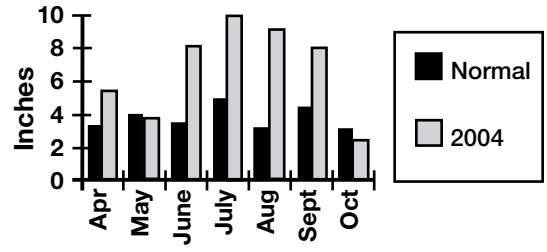


Figure 8. 2004 Precipitation at Landisville



ALFALFA

Many varieties of alfalfa exist, and selecting 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 "1" (very dormant) to "9" (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.

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 because 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, Phytophthora root rot resistance may be exceptionally important on farms with moderately to poorly drained soils.

Summary of Crop Conditions

Alfalfa weevil populations were generally low with few localized outbreaks. Potato leafhopper infestations were heavy across most of the state. The additive effect of the dry weather and heavy leafhopper infestations caused damage to be more pronounced than in a normal year.

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 seedlings 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*.

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 to 5%; LR = 6 to 14%; MR = 15 to 30%; R = 31 to 50%; HR = 51% or greater. If the resistance rating for a variety is not listed, the information is not available.

			Pest-Resistance Ratings						
Variety	Marketer[a]	Fall Dormancy	BW	VW	FW	AN	PRR	APH1	Appears in Table No.
361 HY	Preferred Seed	4	HR	R	HR	R	HR	R	4,8
4A421	Mycogen Seeds	4	HR	HR	HR	HR	HR	HR	3,4,7,8
4G418RR	Mycogen Seeds	4	HR	HR	HR	HR	HR	HR	5,9
53Q30	Pioneer Hi-Bred Int'l, Inc.	3	HR	HR	HR	HR	HR	HR	4,8
54H91	Pioneer Hi-Bred Int'l, Inc.	4	HR	HR	R	HR	HR	R	2,3,6,7
54Q25	Pioneer Hi-Bred Int'l, Inc.	4	HR	HR	HR	HR	HR	R	2,3,6,7
54V46	Pioneer Hi-Bred Int'l, Inc.	4	HR	HR	HR	HR	HR	HR	2,3,4,5,6,7,8,9
6400 HT	Garst Seeds	4	HR	HR	HR	HR	HR	HR	2,6
6415	Garst Seeds	4	HR	HR	HR	HR	HR	HR	2,3,4,6,7,8
AMERISTAND 407TQ	Hytest Seeds, P.L. Rohrer	4	HR	HR	HR	HR	HR	HR	4,5,9
ASCEND	Mid Atlantic Seeds	5	HR	HR	HR	HR	HR	HR	3,7
CIMARRON VL400	Wetsel, Inc.	4	R	R	HR	HR	HR	R	3,7
CW 24027	Brett-Young Seeds	4	HR	HR	HR	HR	HR	HR	5,9
DKA33-16	Dekalb	3	HR	HR	HR	HR	HR	HR	2,6
DKA42-15	Dekalb	4	HR	HR	HR	HR	HR	HR	3,7
DKA50-18	Dekalb	5	HR	HR	HR	HR	HR	—	2,6
DOUBLE EAGLE	American Seed Co.	4	HR	HR	HR	HR	HR	HR	4,8
ENFORCER	Growmark FS	4	HR	HR	HR	HR	HR	HR	3,7
ESCALADE	Growmark FS	5	HR	R	HR	R	HR	R	3,5,7,9
EVERLAST	UAP	4	HR	HR	HR	HR	HR	R	3,7
EXPEDITION	NK Brand/Syngenta Seeds	5	R	HR	HR	HR	HR	HR	2,6
FSG 351	Seedway	3	HR	R	HR	HR	HR	R	3,7
FSG 400 LH	Seedway	4	HR	HR	HR	HR	HR	HR	3,7
FSG 406	Seedway	4	HR	HR	HR	HR	HR	HR	3,7
FSG 408 DP	Seedway	4	HR	HR	HR	HR	HR	R	3,7
FSG 505	Seedway	5	HR	HR	HR	HR	HR	HR	3,7
GENOA	NK Brand/Syngenta Seeds	4	HR	HR	HR	HR	HR	HR	3,4,7,8
GUARDSMAN II	Seedway	4	HR	HR	HR	HR	HR	—	3,7

(Table 1 continued)

Variety	Marketer[a]	Fall Dormancy	Pest-Resistance Ratings						Appears in Table No.
			BW	VW	FW	AN	PRR	APH1	
HYBRI+ 421	NC+ Hybrids	4	HR	R	HR	R	HR	R	4,8
HYBRIFORCE-420/ WET	Dairyland Seed Co.	4	HR	R	HR	R	HR	R	2,3,6,7
INTEGRITY	Producer's Choice	4	HR	HR	HR	HR	HR	HR	3,4,7,8
JADE III	NC+ Hybrids	4	HR	R	HR	HR	HR	R	3,7
KINGFISHER 30-30 Q	King's AgriSeeds	3	HR	HR	HR	HR	HR	HR	5,9
KINGFISHER 444	King's AgriSeeds	4	HR	HR	HR	HR	HR	HR	4,5,9
L-311	Legacy Seeds	3	HR	HR	HR	HR	HR	HR	2,6
L-411HD	Legacy Seeds	4	HR	HR	HR	HR	HR	HR	3,7
L-447HD	Legacy Seeds	4	HR	R	HR	HR	HR	HR	4,8
LEGENDAIRY 5.0	Croplan Genetics	4	HR	HR	HR	HR	HR	HR	3,7
LIGHTNING EXTRA	Preferred Seed	4	HR	HR	HR	R	HR	HR	5,9
MAGNUM VI	Dairyland Seed Co.	4	HR	HR	HR	HR	HR	HR	5,9
MARINER III	Growmark FS	4	HR	R	HR	HR	HR	HR	3,5,9
MARVEL	Growmark FS	4	HR	HR	HR	HR	HR	HR	3,5,7,9
MILESTONE	Chemgro Seeds	3	HR	R	HR	R	HR	R	4,8
NOVA	Northstar Seeds	4	HR	R	HR	R	HR	R	3,7
ONEIDA VR	Public	3	R	HR	HR	MR	MR	—	2,3,4,5,6,7,8,9
PARAMOUNT II	Chemgro Seeds	3	HR	HR	HR	HR	HR	—	2,6
PERFORM	Doebler's Hybrids	4	HR	HR	HR	HR	HR	HR	4,8
POWER 4.2	Power Seeds	4	HR	R	HR	R	HR	HR	2,6
PROLIFIC	Doebler's Hybrids	4	HR	HR	HR	HR	HR	HR	4,8
REBOUND 5.0	Croplan Genetics	4	HR	R	HR	HR	HR	HR	3,7
REGAL	Northstar Seeds	5	HR	R	HR	R	R	MR	2,6
REGEN	Seedway	3	R	HR	HR	HR	R	—	3,7
STARBUCK	T.A. Seeds	3	HR	R	HR	HR	HR	HR	5,9
TRIBUTE	Chemgro Seeds	5	HR	R	HR	HR	HR	—	2,6
VERNAL	Public	2	R	S	MR	S	S	S	2,3,4,5,6,7,8,9
WITHSTAND	Allied Seed	4	HR	HR	HR	HR	HR	HR	5,9
WL 335 HQ	Hytest Seeds	4	HR	HR	HR	HR	HR	HR	3,7
WL 343 HQ	Agriculver, Hytest Seeds, UAP	4	HR	HR	HR	HR	HR	HR	5,9
WL 348 AP	Agriculver, Hytest Seeds, UAP	4	HR	HR	HR	HR	HR	HR	2,6
WL 357 HQ	Agriculver, Hytest Seeds, UAP	5	HR	HR	HR	HR	HR	HR	2,6

a. Alfalfa Marketers listed in this report—location and phone number.

AgriCulver, Inc.
Trumansburg, NY 14866
Phone: 607-387-5788

Allied Seed, LLC
Macon, MO 63552
Phone: 800-880-8127

American Seed Co.
Porter's Siding, PA 17362
Phone: 717-225-3730

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

Chemgro Seeds
E. Petersburg, PA 17520
Phone: 800-346-4769

Croplan Genetics
St. Paul, MN 55164
Phone: 651-765-7510

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

Dekalb
St. Louis, MO 63167
Phone: 800-768-6387

Doebler's Hybrids
Jersey Shore, PA 17740
Phone: 570-753-3210
Web: www.doeblers.com

Garst Seed Co.
Slater, IA
Phone: 888-464-2778
Web: www.garstseed.com

Growmark FS
York, PA 17402
Phone: 800-338-4769

Hytest Seeds
Dover, PA 17315
Phone: 717-870-0351

Hubner Hybrids
Columbia, PA 17512
Phone: 717-684-8718

King's AgriSeeds
Ronks, PA 17572
Phone: 866-687-6224

Legacy Seeds, Inc.
Manheim, PA 17545
Phone: 717-665-7655

Mid Atlantic Seeds
York, PA 17403
Phone: 717-852-8894

Mycogen Seeds
Export, PA 15632
Phone: 724-468-6533

NC+ Hybrids
Blairsville, PA 15717
Phone: 800-279-7999

NK Brand/Syngenta Seeds
Golden Valley, MN 55427
Phone: 800-445-0956

Northstar Seeds
Neepawa, Manitoba ROJ 1H0, Canada
Phone: 204-476-5241
Web: www.northstarseed.com

P. L. Rohrer & Bro., Inc.
Smoketown, PA 17576
Phone: 717-299-2571

Pioneer Hi-Bred Int'l, Inc.
Mount Joy, PA 17552
Phone: 717-653-5605
Web: pioneer.com

Power Seeds
Lindsay, Ontario, Canada
Phone: 705-324-4400

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

Producer's Choice
Story City, IA 50248
Phone: 866-744-5710

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

T.A. Seeds
Jersey Shore, PA 17740
Phone: 570-753-5503

UAP
Avon, NY 14414
Phone: 585-226-2700

UAP
Holtwood, PA 17532
Phone: 707-284-5350

Wetsel, Inc.
Kittanning, PA 16201
Phone: 800-742-2510

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Table 2. 2003 alfalfa variety trial—Rock Springs.

Variety	2007 Yield	2006 Yield	2005 Yield	2004 Yield	**2004–07 Average**	Stand 9/21/07
EXPEDITION	7.72	8.48	5.64	6.51	**7.09**	73.0
6415	7.69	8.75	5.87	6.78	**7.28**	75.4
DKA50-18	7.59	8.39	5.68	6.56	**7.11**	80.7
DKA33-16	7.43	8.62	5.79	6.82	**7.17**	73.9
WL 357 HQ	7.43	8.65	5.56	6.81	**7.12**	77.7
PARAMOUNT II	7.23	8.40	5.67	6.30	**6.92**	82.2
TRIBUTE	7.01	8.06	5.38	6.47	**6.74**	72.9
54Q25	6.81	8.21	4.96	6.31	**6.58**	77.2
54V46	6.72	7.94	4.95	6.70	**6.61**	79.1
WL 348 AP	6.71	7.67	5.02	6.23	**6.41**	80.1
POWER 4.2	6.70	7.72	5.23	6.15	**6.46**	76.9
HYBRIFORCE-420/WET	6.38	7.73	5.08	6.69	**6.44**	76.6
L-311	6.34	7.60	4.85	6.45	**6.32**	76.7
6400 HT	5.89	6.80	4.28	6.14	**5.73**	79.8
ONEIDA VR	5.56	6.59	4.21	5.79	**5.50**	73.5
VERNAL	4.78	6.21	3.81	5.32	**5.03**	68.4
54H91	4.70	6.30	3.96	5.71	**5.16**	67.1
REGAL	4.49	6.44	4.23	5.74	**5.23**	59.7
GRAND MEAN	6.41	7.63	4.91	6.28	**6.31**	75.6
CV (%)	7.03	5.78	9.65	5.89	**5.91**	7.6
LSD (p = 0.05)	0.63	0.62	0.67	0.52	**0.52**	8.1

CV = coefficient of variation
LSD = least significant difference

- Seeded April 16, 2003.
- 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 28 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

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

Table 3. 2004 alfalfa variety trial—Rock Springs.

Variety	2007 Yield	2006 Yield	2005 Yield	2005–07 Average	Stand 9/27/07
LEGENDAIRY 5.0	7.32	8.53	5.98	**7.28**	79.3
FSG 505	7.30	8.29	6.04	**7.21**	79.1
REBOUND 5.0	7.06	8.27	5.41	**6.91**	79.8
FSG 351	6.99	7.96	5.57	**6.84**	81.9
6415	6.89	8.29	5.95	**7.04**	75.8
DKA42-15	6.80	8.49	6.36	**7.22**	72.7
ASCEND	6.79	7.89	5.13	**6.60**	80.4
4A421	6.77	7.83	5.10	**6.57**	72.3
WL 335 HQ	6.77	8.08	5.74	**6.87**	79.3
MARVEL*	6.72	8.08	5.43	**6.74**	81.3
INTEGRITY*	6.49	7.62	5.18	**6.43**	77.6
FSG 408 DP	6.46	7.62	5.39	**6.49**	77.6
HYBRIFORCE-420/WET	6.42	7.85	5.56	**6.61**	74.8
54V46	6.29	7.72	5.34	**6.45**	79.8
JADE III	6.28	7.57	5.16	**6.33**	75.5
MARINER III*	6.23	7.69	5.18	**6.36**	86.0
ESCLADE*	6.19	7.54	5.28	**6.34**	73.1
FSG 406	6.15	7.63	5.62	**6.47**	71.2
54Q25	6.14	7.72	5.49	**6.45**	76.7
GENOA	6.03	7.17	4.87	**6.02**	67.8
REGEN*	5.98	7.51	4.53	**6.01**	75.3
L-411HD	5.86	7.67	5.36	**6.30**	75.0
EVERLAST	5.69	7.18	4.97	**5.95**	76.4
GUARDSMAN II*	5.69	6.63	4.27	**5.53**	68.3
ENFORCER*	5.67	7.23	4.93	**5.94**	64.0
NOVA	5.61	7.66	5.29	**6.18**	76.9
ONEIDA VR	5.44	7.12	5.06	**5.87**	72.1
CIMARRON VL400*	5.43	6.95	5.06	**5.82**	75.9
VERNAL	5.34	6.47	4.53	**5.45**	77.9
54H91	4.99	6.55	4.75	**5.43**	76.5
FSG 400 LH	4.83	6.19	3.98	**5.00**	73.6
GRAND MEAN	6.22	7.60	5.23	**6.35**	76.2
CV (%)	10.65	8.03	13.79	**9.84**	6.0
LSD (p = 0.05)	0.93	0.85	1.01	**0.88**	6.4

* 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, 2004.
- 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 40 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

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

Table 4. 2005 alfalfa variety trial—Rock Springs.

Variety	2007 Yield	2006 Yield	2006–07 Average	Stand 10/2/07
GENOA	7.15	6.62	**6.89**	89.8
INTEGRITY	6.68	5.91	**6.29**	90.2
4A421	6.67	6.44	**6.55**	91.0
L-447HD	6.66	6.18	**6.42**	87.1
MILESTONE*	6.63	6.35	**6.49**	87.4
6415	6.61	6.48	**6.55**	87.9
DOUBLE EAGLE	6.51	6.45	**6.48**	91.2
PERFORM*	6.44	6.18	**6.31**	88.0
PROLIFIC	6.25	6.01	**6.12**	90.2
HYBRI+ 421	6.01	5.88	**5.94**	90.6
AMERSTAND 407TQ*	5.83	6.59	**6.21**	88.8
361 HY	5.81	5.55	**5.68**	90.3
VERNAL	5.80	5.33	**5.57**	90.7
54V46	5.78	6.22	**6.00**	91.5
KINGFISHER 444*	5.60	5.35	**5.48**	90.7
53Q30	5.10	5.87	**5.49**	88.4
ONEIDA VR	5.03	5.22	**5.12**	90.8
GRAND MEAN	6.03	5.92	**5.97**	90.1
CV (%)	14.61	6.44	**8.53**	2.7
LSD (p = 0.05)	NS	0.54	**0.71**	NS

* 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
NS = not significant at alpha = 0.05

- Seeded April 14, 2005.
- 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.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

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

Table 5. 2006 alfalfa variety trial—Rock Springs.

Variety	2007 Yield	Stand 10/2/07
STARBUCK	7.21	87.5
AMERISTAND 407TQ	7.17	86.2
MAGNUM VI*	7.13	88.0
MARVEL	7.11	87.4
KINGFISHER 30-30 Q	7.10	86.5
LIGHTNING EXTRA	7.03	89.1
ESCALADE	7.01	89.7
CW 24027*	6.86	89.1
KINGFISHER 444	6.52	91.5
WL 343 HQ	6.46	89.2
4G418RR	6.43	89.3
MARINER III	6.37	90.6
ONEIDA VR	6.33	88.8
54V46	6.28	91.1
WITHSTAND	5.81	91.0
VERNAL	5.21	86.4
GRAND MEAN	6.57	88.9
CV (%)	9.19	3.5
LSD (p = 0.05)	0.85	NS

* 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
NS = not significant at alpha = 0.05

- Seeded April 12, 2006.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of four cuttings.
- 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 38 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

Table 6. 2003 alfalfa variety trial—Landisville.

Variety	2007 Yield	2006 Yield	2005 Yield	2004 Yield	**2004–07 Average**	Stand 10/17/07
DKA50-18	6.21	6.71	6.59	7.08	**6.65**	71.4
DKA33-16	5.95	6.73	6.16	6.61	**6.36**	74.9
L-311	5.66	6.50	6.03	6.81	**6.25**	73.3
6415	5.63	6.55	5.83	6.59	**6.15**	69.7
54V46	5.62	6.52	5.62	6.36	**6.03**	79.5
EXPEDITION	5.55	6.50	5.80	6.48	**6.08**	65.9
WL 357 HQ	5.52	6.20	5.59	6.41	**5.93**	72.2
PARAMOUNT II	5.44	6.16	5.64	6.64	**5.97**	68.8
TRIBUTE	5.32	6.32	5.49	6.70	**5.96**	72.4
54Q25	5.28	6.06	5.15	6.03	**5.63**	73.8
POWER 4.2	5.26	6.03	5.33	6.12	**5.69**	72.6
HYBRIFORCE-420/WET	5.21	6.21	5.23	6.54	**5.80**	72.6
WL 348 AP	5.01	5.72	5.01	5.87	**5.41**	71.8
REGAL	4.95	5.97	5.22	6.32	**5.62**	66.3
6400 HT	4.82	5.73	4.67	6.20	**5.36**	72.1
VERNAL	4.20	5.19	3.66	4.94	**4.49**	68.5
ONEIDA VR	3.99	4.86	3.84	5.16	**4.46**	64.1
54H91	3.86	4.84	3.75	5.68	**4.54**	69.7
GRAND MEAN	5.23	6.13	5.33	6.33	**5.75**	72.2
CV (%)	8.52	6.03	7.36	5.13	**5.31**	9.8
LSD (p = 0.05)	0.63	0.52	0.55	0.46	**0.43**	10.0

CV = coefficient of variation
LSD = Least significant difference

- Seeded April 23, 2003.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of four cuttings in 2005 and five cuttings each year in 2004, 2006, and 2007.
- 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.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

Table 7. 2004 alfalfa variety trial—Landisville.

Variety	2007 Yield	2006 Yield	2005 Yield	**2005–07 Average**	Stand 10/18/07
LEGENDAIRY 5.0	8.05	7.59	6.80	**7.48**	70.0
54V46	7.65	7.71	7.17	**7.51**	73.0
6415	7.63	7.73	7.15	**7.50**	72.1
FSG 505	7.50	7.62	6.87	**7.33**	74.7
FSG 351	7.47	7.48	6.95	**7.30**	72.9
GENOA	7.46	7.57	6.97	**7.34**	70.6
HYBRIFORCE-420/WET	7.42	7.39	6.53	**7.12**	76.5
REBOUND 5.0	7.41	7.48	6.92	**7.27**	58.0
4A421	7.27	7.36	6.74	**7.12**	66.6
54Q25	7.20	7.50	6.75	**7.15**	71.9
DKA42-15	7.20	7.33	6.81	**7.11**	72.8
MARVEL*	7.06	7.50	7.01	**7.19**	69.5
ESCLADE*	6.72	7.12	7.05	**6.96**	74.9
JADE III	6.70	6.72	5.92	**6.45**	78.5
FSG 408 DP	6.67	6.62	6.25	**6.51**	77.7
WL 335 HQ	6.48	6.68	6.36	**6.50**	73.1
L-411HD	6.45	6.92	6.72	**6.69**	73.1
ASCEND	6.42	6.94	6.18	**6.51**	72.6
EVERLAST	6.26	6.77	6.42	**6.49**	71.2
NOVA	6.19	6.77	6.26	**6.41**	75.0
FSG 406	6.16	6.62	6.38	**6.38**	71.3
ONEIDA VR	6.12	6.34	6.24	**6.23**	76.4
REGEN*	6.00	6.88	6.42	**6.43**	75.9
INTEGRITY*	5.96	6.41	5.88	**6.08**	77.6
GUARDSMAN II*	5.81	6.03	6.16	**6.00**	76.5
CIMARRON VL400*	5.71	6.56	6.06	**6.11**	71.2
FSG 400 LH	5.63	6.23	5.90	**5.92**	62.5
VERNAL	4.93	5.80	5.30	**5.35**	72.5
54H91	4.92	6.11	5.95	**5.66**	76.8
ENFORCER*	4.69	5.66	5.49	**5.28**	61.3
GRAND MEAN	6.66	6.96	6.45	**6.69**	73.1
CV (%)	7.68	6.17	5.75	**5.93**	10.7
LSD (p = 0.05)	0.72	0.60	0.52	**0.56**	10.9

* 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 21, 2004.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of four cuttings in 2005 and five cuttings each year in 2006 and 2007.
- 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.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

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

Table 8. 2005 alfalfa variety trial—Landisville.

Variety	2007 Yield	2006 Yield	2006–07 Average	Stand 10/16/07
GENOA	7.23	8.22	**7.72**	85.1
6415	6.77	7.96	**7.36**	86.4
4A421	6.73	7.88	**7.31**	86.0
DOUBLE EAGLE	6.69	7.80	**7.25**	84.5
54V46	6.60	7.79	**7.19**	87.9
HYBRI+ 421	6.52	7.93	**7.22**	87.1
PERFORM*	6.46	7.65	**7.06**	89.2
L-447HD	6.40	7.67	**7.04**	85.6
MILESTONE*	6.40	7.45	**6.93**	86.9
53Q30	6.38	7.47	**6.93**	84.8
INTEGRITY	6.20	7.43	**6.82**	88.2
PROLIFIC	6.09	7.57	**6.83**	86.4
361 HY	6.06	7.30	**6.68**	85.7
ONEIDA VR	5.82	7.29	**6.55**	86.1
VERNAL	5.12	6.36	**5.75**	88.6
GRAND MEAN	6.32	7.54	**6.93**	87.2
CV (%)	5.93	5.09	**5.00**	3.1
LSD (p = 0.05)	0.53	0.54	**0.49**	NS

* 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
ns = not significant at alpha = 0.05

- Seeded April 13, 2005.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of five 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 26 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

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

Table 9. 2006 alfalfa variety trial—Landisville.

Variety	2007 Yield	Stand 10/17/07
MARVEL	7.77	85.4
AMERISTAND 407TQ	7.34	86.2
54V46	7.16	90.5
MARINER III	7.14	87.3
WL 343 HQ	7.14	84.7
LIGHTNING EXTRA	7.10	89.0
ESCALADE	7.02	89.0
MAGNUM VI*	6.99	85.3
CW 24027*	6.93	88.1
STARBUCK	6.91	86.5
4G418RR	6.71	86.1
KINGFISHER 444	6.70	90.1
ONEIDA VR	6.37	88.0
KINGFISHER 30-30 Q	6.06	86.3
WITHSTAND	5.87	89.6
VERNAL	5.60	86.8
GRAND MEAN	6.89	87.6
CV (%)	6.38	3.3
LSD (p = 0.05)	0.62	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
ns = not significant at alpha = 0.05

- Seeded April 18, 2006.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of five cuttings.
- 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.
- Variety means are adjusted means derived from nearest neighbor's analysis.
- Varieties are listed by rank for 2007 yield.

COOL-SEASON GRASSES

Many farmers in Pennsylvania could benefit from including some cool-season grasses as an integral part of their forage program. The following tables summarize the yield potential of many perennial grass varieties in our research trials at Penn State's 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.

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

Table 10 lists cool-season grass varieties in our testing program that are currently marketed in Pennsylvania. Tables 11 and 12 offer guidelines for assessing the production potential of various cool-season grass varieties once the species has been chosen.

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			
BigFoot	Brome, Hybrid	Grassland Oregon	12
Hakari	Brome, Alaska	King's AgriSeeds	11
Peak	Brome, Smooth	Seedway, Growmark FS	11
Saratoga	Brome, Smooth	Public	11,12
Fescue			
Advance MaxQ	Fescue, Tall	Pennington Seed	12
Cowgirl	Fescue, Tall	Olds Seed, Wetsel Seed Co.	11
Enhance	Fescue, Tall	Seedway	11
Jessup MaxQ	Fescue, Tall	Pennington Seed	12
Kentucky 31	Fescue, Tall	P.L. Rohrer	12
Stockman	Fescue, Tall	Hytest Seeds	11
Verdant	Fescue, Tall	Ernst Conservation Seeds	12
Orchardgrass			
Ambrosia		Ernst Conservation Seeds	12
Athos		King's AgriSeeds	11
Bounty		Seedway	11
Century		Chemgro, Hytest Seeds	11
Command		Hytest Seeds	11
Extend		Seedway	11
Harvestar		Columbia Seeds	12
Haymaster		Seedway	11
LG-31		Doebler's	11
Niva		King's AgriSeeds	11
Pennlate		P.L. Rohrer, Seedway, Public	11,12
Persist		King's AgriSeeds	11
Shiloh II		Penn State Seed Co.	11
Takena 2		Smith Seed Services	11
Reed Canarygrass			
Marathon		Growmark FS	11
Ryegrass			
Barsprinter	Diploid Perennial	King's AgriSeeds	11
Boost	Tetraploid Perennial	Seedway	12
Full Throttle	Tetraploid Perennial	Columbia Seeds	12
Remington	Tetraploid Perennial	King's AgriSeeds	11
Sierra	Diploid Perennial	Lewis Seed Co.	11
Tetrelite II	Tetraploid Hybrid	DLF International Seeds	11,12

(Table 10 continued)

Species/Variety	Ploidy/Species	Marketer[a]	Appears in Table No.
Timothy			
Barfleo		King's AgriSeeds	11
Barliza		King's AgriSeeds	11
Climax		P.L. Rohrer, Seedway, Public	11,12
Crest		Seedway	12
Derby		King's AgriSeeds	11
Express		Hytest Seeds	11
Summit		Seedway	11

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

Chemgro Seeds
E. Petersburg, PA 17520
Phone: 800-346-4769

Columbia Seeds
Corvallis, OR 97330
Phone: 541-757-1468

Doebler's Hybrids
Jersey Shore, PA 17740
Phone: 570-753-3210
Web: www.doeblers.com

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

Ernst Conservation Seeds
Meadville, PA 16335
Phone: 800-873-3321
Web: www.ernstseed.com

Grassland Oregon
Keizer, OR 97307
Phone: 503-566-9900

Growmark FS
York, PA 17402
Phone: 800-338-4769

Hytest Seeds
Dover, PA 17315
Phone: 717-870-0351

King's AgriSeeds
Ronks, PA 17572
Phone: 866-687-6224

Lewis Seed Co.
Sheed, OR 97377
Phone: 541-466-3704

Olds Seed Solutions
Madison, WI 53707
Phone: 608-249-9291
Web: www.seedsolutions.com

P. L. Rohrer & Bro., Inc.
Smoketown, PA 17576
Phone: 717-299-2571

Penn State Seed Co.
Dallas, PA 18612
Phone: 570-675-8585

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

Smith Seed Services
Halsey, OR 97348
Phone: 541-369-2831

Wetsel, Inc.
Kittanning, PA 16201
Phone: 800-742-2510

Table 11. 2004 cool-season grass variety trial—Rock Springs.

Species	Variety	Ploidy/Species	2007 Yield	2006 Yield	2005 Yield	2005–07 Average	Date of 1st cutting[a]	Stand 10/9/07
Bromegrass								
	Peak	Brome, Smooth	3.25	4.38	2.88	3.50	5/24	70.9
	Hakari	Brome, Alaska	2.99	3.54	3.46	3.32	6/6	72.0
	Saratoga	Brome, Smooth	*	*	*			
Fescue								
	Enhance	Fescue, Tall	4.00	5.93	4.91	4.95	5/24	94.7
	Stockman	Fescue, Tall	3.66	6.42	4.88	4.99	5/24	94.2
	Cowgirl	Fescue, Tall	3.43	6.05	4.28	4.59	5/21	96.1
Orchardgrass								
	Century		3.62	5.50	4.73	4.60	5/17	90.2
	Bounty		3.58	5.99	4.79	4.78	5/17	90.1
	Extend		3.48	6.06	5.46	4.98	5/17	82.6
	Pennlate		3.47	6.41	4.65	4.83	5/17	89.7
	Haymaster		3.40	5.54	5.21	4.71	5/17	86.8
	Persist		3.34	6.05	4.64	4.67	5/17	91.5
	Takena 2		3.30	6.26	5.03	4.85	5/17	89.8
	Shiloh II		3.20	5.84	3.95	4.32	5/17	91.5
	Niva		3.08	5.59	4.77	4.47	5/24	86.8
	Athos		3.07	5.03	4.62	4.23	5/29	87.3
	Command		3.05	5.16	4.45	4.20	5/21	83.7
	LG-31		2.70	5.08	4.46	4.06	5/29	87.5
Reed Canarygrass								
	Marathon		2.93	4.55	3.36	3.61	5/29	85.7
Ryegrass								
	Barsprinter	Diploid/Perennial	1.81	3.58	3.27	2.94	6/6	81.8
	Tetrelite II	Tetraploid/Hybrid	1.72	4.03	4.38	3.36	6/6	40.7
	Sierra	Diploid/Perennial	1.72	4.31	3.36	3.11	5/21	58.0
	Remington	Tetraploid/Perennial	1.18	3.84	3.21	2.79	6/6	72.3
Timothy								
	Barfleo		3.32	5.45	3.81	4.18	6/6	89.6
	Barliza		3.22	4.38	4.03	3.86	6/6	87.9
	Derby		3.21	4.56	4.21	3.98	5/29	87.0
	Summit		3.04	4.28	4.66	3.98	5/29	83.8
	Express		2.86	4.24	3.81	3.63	6/6	84.2
	Climax		2.82	4.46	3.64	3.63	6/6	85.6
GRAND MEAN			2.78	4.71	3.97	3.85		81.9
CV (%)			14.31	8.25	9.54	7.02		6.6
LSD (p = 0.05)			0.56	0.54	0.53	0.38		7.5

* No data taken in indicated year due to stand thinning and/or encroachment by other grasses.
a. Refers to the date when the first cutting was made in 2007. First cutting was made at late boot to early heading.

CV = coefficient of variation
LSD = least significant difference

- Seeded April 20, 2004.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of four cuttings each year.
- Grand Mean, CV, and LSD values represent 46 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis. Therefore, multiple-year averages may not be the arithmetic mean of the years involved.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Varieties are listed by rank within species for 2007 yield.

Table 12. 2006 cool-season grass variety trial—Rock Springs.

Species	Variety	Ploidy/Species	2007 Yield	Date of 1st cutting[a]	Stand 10/6/06
Bromegrass					
	BigFoot	Brome, Hybrid	3.84	5/17	71.6
	Saratoga	Brome, Smooth	2.74	5/24	63.5
Fescue					
	Kentucky 31	Fescue, Tall	3.70	5/24	93.9
	Jessup MaxQ	Fescue, Tall	3.65	5/21	92.7
	Verdant	Fescue, Tall	3.10	5/24	89.1
	Advance MaxQ	Fescue, Tall	3.00	5/24	90.3
Orchardgrass					
	Pennlate		4.10	5/17	93.3
	Ambrosia		3.87	5/24	92.0
	Harvestar		3.50	5/29	93.7
Ryegrass					
	Boost	Tetraploid/Perennial	2.14	5/29	88.9
	Tetrelite II	Tetraploid/Hybrid	1.88	5/29	86.5
	Full Throttle	Tetraploid/Perennial	1.52	5/24	93.7
Timothy					
	Crest		3.43	6/6	87.3
	Climax		3.24	6/6	85.9
GRAND MEAN			3.35		89.4
CV (%)			12.05		3.9
LSD (p = 0.05)			0.56		4.9

a. Refers to the date when the first cutting was made in 2007. First cutting was made at late boot to early heading.

CV = coefficient of variation
LSD = least significant difference

- Seeded April 13, 2006.
- Yields (tons per acre DM Basis).
- Yields indicated represent the sum of four cuttings each year.
- Grand Mean, CV, and LSD values represent 49 total entries.
- Variety means are adjusted means derived from nearest neighbor's analysis. Therefore, multiple-year averages may not be the arithmetic mean of the years involved.
- Stand score based on a scale from 1 to 100. A 100 is considered to be a perfect stand.
- Varieties are listed by rank within species for 2007 yield.

FORAGE GRAZING TRIAL

Forage variety evaluation under grazing is done at the Haller Farm near State College, Pennsylvania. This year's report contains the results from a trial seeded in August 2006. Grazing began the spring after seeding. All entries from each forage species were blocked together so that each species block could be grazed independently of other species, thus eliminating animal grazing preference between forage species. Fertility was maintained at optimum based on soil test recommendations. Nitrogen as urea was applied at 75 lb/acre at green-up in the spring, in June, and again in September.

Grazing was initiated when the average height of a species block reached 10 inches. Cow-calf pairs of mixed breeds were used to graze. Samples were collected pre- and postgrazing at a 3-inch height to determine dry matter yield and provide an estimate of rejection for each entry. After grazing, solid manure was removed from all plots and the area was clipped (when needed) to a uniform 3-inch height using a disk mower. Herbicides were applied as needed to control invading weed species.

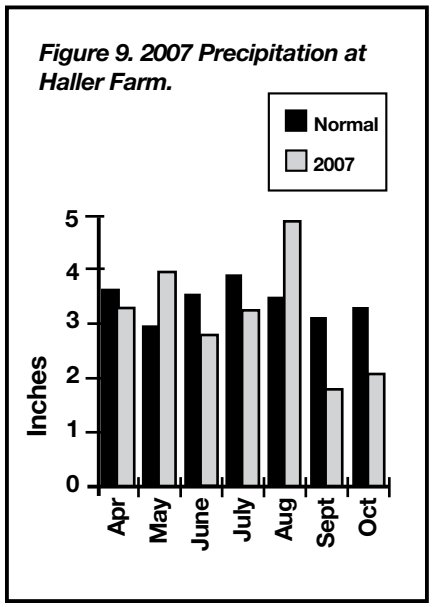

Figure 9. 2007 Precipitation at Haller Farm.

Table 13. Varieties, endophyte level, ploidy level, and marketers of forage species evaluated under grazing.

Species/Variety	Endophyte[a]/Ploidy	Marketer[b]
Orchardgrass		
Ambrosia		Ernst Conservation Seeds
Olympia		Pennington Seed
Pennlate (Check)		P.L. Rohrer
Tekapo		P.L. Rohrer; AgriCulver; King's AgriSeeds; Ampac
Ryegrass		
Bar 1M	NI/Diploid	Barenbrug
Barruti (Check)	NI/Diploid	Barenbrug
Boost	NI	Seedway
Mara	NI/Diploid	Barenbrug
Tall Fescue/Festulolium		
Advance MaxQ	NT	Pennington Seed
Agula	Festulolium/NI	Allied Seed
Barianne (Check)	NI	Barenbrug
Barolex (Check)	NI	Barenbrug
Bonus	Festulolium/NI	Growmark FS
Duo (check)	Festulolium/NI	P.L. Rohrer; Preferred Seed; Ampac
Gain	Festulolium/NI	Seedway
Jessup MaxQ	NT	Pennington Seed
Savory	NI	DLF Int. Seeds
Select (Check)	NI	Southern States; Growmark FS
Verdant	5% NT	Ernst Conservation Seeds
Timothy		
Climax (Check)		P.L. Rohrer
Derby (Check)		King's AgriSeed
Summit		Seedway
Alfalfa		
FSG 408DP		Seedway
Radiant (Check)		P.L. Rohrer
White Clover		
Alice		Barenbrug
Pinnacle		Seedway
RegalGraze		King's AgriSeed
Resolute		Seedway; Growmark FS

a. NI = noninfected; NT = nontoxic endophyte.

b. Alfalfa Forage Marketers listed in this report—location and phone number.

Allied Seed
Macon, GA 63552
Phone: 800-880-8127
Web: www.alliedseed.com

AgriCulver
Trumansburg, NY 14866
Phone: 800-836-3701
Web: www.agriculverseeds.com

Ampac Seed Company
State College, PA 16803
Phone: 814-234-7930
Web: www.ampacseed.com

Barenbrug USA
Tangent, OR 97389
Phone: 800-547-4101
Web: www.barusa.com

DLF-International Seeds
Albany, OR 97348
Phone: 541-369-2251
Web: www.dlfis.com

Ernst Conservation Seeds
Meadville, PA 16335
Phone: 800-873-3321
Web: www.ernstseed.com

Growmark FS
York , PA 17402
Phone: 800-338-4769
Web: www.growmark.com

King's AgriSeeds
Ronks, PA 17572
Phone: 717-687-6224

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

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

P.L. Rohrer & Bro., Inc.
Smoketown, PA 17576
Phone: 717-299-2571
Web: www.rohrerseeds.com

Seedway
Mifflinburg, PA 17844
Phone: 800-338-2137
Web: www.seedway.com

Southern States
Richmond, VA 23230
Phone: 804-281-1000
Web: www.southernstates.com

Table 14. 2006 grazing variety trial—Haller Farm, State College, Pennsylvania.

Species/Variety	% Stand 10/6/2006	% Stand 4/19/2007	Ht. (inches) 4/19/2007	Graze dates in 2007	Forage Consumed (lbs/acre) 2007 Spring	2007 Summer	2007 Fall	2007 Total	% Stand 10/15/2007
Orchardgrass									
Ambrosia	93	79	2.4	5/17, 6/7	2,475	2,265	702	5,442	81
Olympia	95	87	2.6	7/3, 8/27	2,960	2,640	636	6,236	89
Pennlate (Check)	94	80	2.4	10/01	2,795	2,386	608	5,790	86
Tekapo	94	54	1.0		1,807	1,923	636	4,366	82
Grand Mean	94	68	1.8		2,106	2,037	657	4,801	82
CV (%)	3	15	24		17	17	23	15	7
LSD (p = 0.05)	NS	15	0.6		519	514	NS	1,030	NS
Ryegrass									
BG34 (Check)	95	95	3.0	5/8, 5/21	3,523	1,098	491	5,112	89
Boost	95	94	3.4	6/10, 7/8	3,924	1,132	398	5,455	87
Mara	95	100	3.3	8/6, 10/9	3,924	1,284	467	5,675	93
Grand Mean	94	95	3		3,197	895	434	4,527	91
CV (%)	2	3	14		34	50	31	35	3
LSD (p = 0.05)	NS	3	NS		NS	NS	NS	NS	4
Tall Fescue/Festulolium									
Advance MaxQ	94	95	3.0	5/14, 6/4	2,912	1,405	1,622	5,940	91
Agula	90	90	3.4	7/1, 7/29	3,892	1,281	661	5,835	80
Barianne (check)	89	89	2.5	9/3, 10/6	3,210	1,213	692	5,115	90
Barolex (check)	95	95	2.4		2,757	1,529	1,480	5,766	92
Bonus	93	92	2.6		3,619	1,120	277	5,016	84
Duo (check)	96	97	3.1		4,674	1,511	587	6,771	87
Gain	91	90	2.8		3,756	1,244	717	5,717	83

(Table 14 continued)

Species/Variety	% Stand 10/6/2006	% Stand 4/19/2007	Ht. (inches) 4/19/2007	Graze dates in 2007	Forage Consumed (lbs/acre) 2007 Spring	2007 Summer	2007 Fall	2007 Total	% Stand 10/15/2007
Jesup MaxQ	95	98	3.1		3,570	1,932	1,746	7,249	95
Savory	91	91	2.5		2,131	860	1,077	4,067	93
Select (check)	90	91	2.6		3,247	1,901	1,833	6,982	95
Verdant	91	88	2.9		2,410	1,312	1,536	5,258	94
Grand Mean	94	94	2.9		3,231	1,533	1,418	6,182	92
CV (%)	3	3	16		24	39	35	28	4
LSD (p = 0.05)	4	4	0.6		1067	NS	687	NS	5
Timothy									
Climax (Check)	88	94	1.9	5/8, 5/21	1,141	714	888	2,742	70
Derby (Check)	93	98	3.0	6/10, 7/8	3,326	1,287	792	5,404	75
Summit	94	95	2.9	8/6, 9/21	3,095	921	848	4,865	72
Grand Mean	91	95	2.6		2,521	974	843	4,337	72
CV (%)	3	3	6		21	34	18	13	10
LSD (p = 0.05)	3	NS	0.2		914	NS	NS	981	NS
Alfalfa									
FSG 408DP	95	69	2.9	5/17, 6/21	3,756	36,99	1,780	9,235	80
Radiant (check)	91	73	2.9	8/27, 10/5	4,598	3,795	1,802	10,195	82
Grand Mean	93	71	2.9		4,177	3,747	1,791	9,715	81
CV (%)	2	6	10		5	18	12	5	6
LSD (p = 0.05)	NS	NS	NS		501	NS	NS	NS	NS
White Clover									
Alice	81	45	0.5	5/17, 6/21	1,491	949	341	2,781	89
Pinnacle	88	49	0.5	8/27, 10/5	1,723	1,125	554	3,402	89
RegalGraze	86	44	0.5		1,830	981	458	3,269	81
Resolute	80	50	0.5		1,646	437	213	2,296	91
Grand Mean	84	47	0.5		1,672	873	392	2,937	87
CV (%)	4	14	0		22	27	33	18	8
LSD (p = 0.05)	6	NS	NS		NS	379	204	NS	NS

- Seeded August 22, 2006.
- Forage consumed (pounds per acre DM Basis); spring—all grazings before June 15; summer—all grazings between June 16 and August 31; fall—all grazings after September 1. Amount of forage consumed by grazing animals was equivalent to forage available because high stocking density did not allow animal preference.
- Varieties within a species are listed alphabetically.

PENNSTATE

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Agricultural Research and Cooperative Extension

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