

# NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS SUMMARY FOR 2016 – SEASON TOTALS

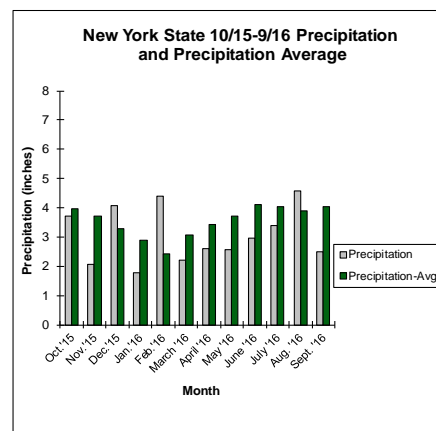
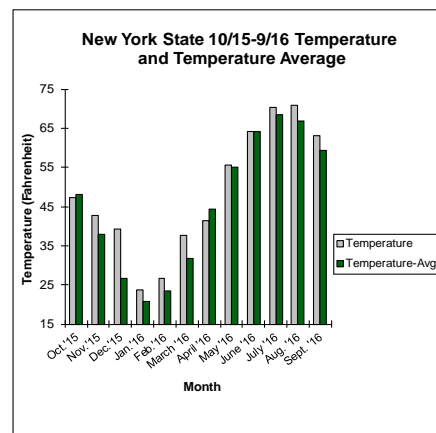


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<http://plbrgen.cals.cornell.edu/research-extension/forage-project/ny-forage-yield-results>. Photo: Harvest complete on alfalfa trial near Richfield Springs, NY.

**Introduction** Forage variety total season yields from New York in the 2016 growing season are in this report. Forage yield trials are planted and harvested annually at the Cornell University Agricultural Experiment Station in Ithaca and at other locations in New York State. Funding for these trials is provided by the companies that submitted the varieties/cultivars in the trials, from Cornell University College of Agriculture and Life Sciences, and from Northern New York Agricultural Development Program. Trials of perennial forages are managed for four years; seeding year and three production years. Alfalfa yields for 2016 averaged 5.3 tons per acre dry matter (0.2 tons less than in 2015), red clover yields averaged 3.1 tons per acre dry matter (2.5 tons per acre less than in 2015), and perennial forage grass yields averaged 4.5 tons per acre dry matter (0.6 tons per acre less than in 2015).

**Cultivar/Variety Selection**

Plant breeders continue to develop new and improved varieties with better agronomic characteristics such as yield, disease and insect resistance, forage quality, etc. Seed cost of improved varieties can be higher than for other varieties, but this cost is generally offset when there is improved performance at each harvest over the life of the stand. In each New York trial, there is a group of top-yielding varieties. Variety performance should be critically evaluated by comparing yield with other varieties in two or more trials that are in the second or later year of production



New York State 10/15-9/16 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell U. <http://www.nrcc.cornell.edu/regional/tables/tables.html>

**Weather and the 2016 Drought.** The winter of 2015/16 had extremely mild temperatures with very little snow cover. April was cooler than normal, however by May the planting conditions were very good. There were some timely rains at the end of May and the first week in June. The remainder of June was precipitation free in Ithaca. By the third week in June, 89% of NY was under drought conditions. A drought watch was issued for NY in July and in August Cornell issued a water use restriction that finally ended Nov. 2<sup>nd</sup>. Overall for 2016 forage yields were lower than normal. The alfalfa trial near Richfield Springs in Otsego County, had severe yellow leaf blotch in early September. The trials seeded in spring 2016 are well established due to timely planting and irrigation of the grass trials in Ithaca.

**Alfalfa (Tables 1 and 2, pages 3-7)** varieties for New York usually need to have resistance (R) or high resistance (HR) to four diseases (bacterial wilt, Verticillium wilt, anthracnose, Phytophthora root rot) and fall dormancy rating should be 2, 3, or 4. Varieties with higher fall dormancy ratings will produce more forage in the fall. Varieties that have fall dormancy ratings higher than 4 may have unacceptable winter-hardiness for New York, particularly in Northern New York.

All of the production year alfalfa trials were harvested three or four times between late May and mid-September. Trials were planted at Cobleskill in Eastern NY and at Ithaca in Central NY in 2016. These trials established well. The trial at Cobleskill was cut off in July and the harvested once in September. The trial at Ithaca was cut off in July, but due to the drought a harvest in September was not taken. Round-up Ready alfalfa varieties are tested for yield in separate trials in Ithaca and in 2016 a Roundup Ready alfalfa trial was seeded in Cobleskill (page 5). A limited number of potato leafhopper (PLH) resistant alfalfa varieties tested in trials that are not sprayed with insecticide (page 6).

**Red Clover (Table 3, page 8)** is generally a two-production year crop in New York and is an excellent forage legume for short-rotation fields and for frost-seeding into established stands. The clover root curculio is a destructive pest on clover, eating the roots and destroying the plants in the later production years. The third production year trial was harvest at first cut, but plot stands were too thin to harvest later in the season.

**Birdsfoot Trefoil** is a legume that tolerates soils that alfalfa will not be productive on. Birdsfoot trefoil should always be planted in combination with other forages. Also, birdsfoot trefoil do not tolerate low cutting heights, so it is advisable to leave 5+ inches of stubble in the field. Birdsfoot trefoil variety trials were not harvested in 2016.

**Grass yield (Tables 4, 5, and 6, pages 9-13)** trials were fertilized with 315 lb/A ammonium sulfate in early April and after first and second harvests. Forage grass trials are normally harvested four times between May 20<sup>th</sup> and November 3<sup>rd</sup>. In 2016 perennial grass trials were harvested 3 times due to drought and slow grass regrowth. Bromegrass does not tolerate intensive management thus was harvested twice this growing season. Grass yields by species for production year trials harvested 2016 are listed in summary **Table 4, pages 9-10**.

Also listed is a visual estimate of percent stand and heading date. Heading date is the calendar date when about 5 heads per plot were visible. Use percent stand, heading date, and yield to select grass varieties that fit your forage program.

Grass forage quality estimates from 2015 for the trials planted in 2013 and 2014 are presented in **Tables 5 and 6, pages 11-12**. Grass forage quality samples are taken at the first growth only, not at the other three harvests. When grass plants produce seed heads, the seed head stems lower forage quality. Samples from each variety are taken on two days – two samples at harvest time and two samples at heading date. Forage quality estimates from 2016 for trials planted in 2014 and 2015 will be available late winter.

**Table 7** (page 13) is a summary of grasses planted and harvested in 2016. The first growth was cut off in July and then the trials were harvested for yield measurements in October.

See 2017 Cornell Guide for Integrated Field Crop Management for more detailed management information (<http://fieldcrops.cals.cornell.edu/>).

We express appreciation to all of our cooperators for allowing us to plant and harvest forage plot trials on their farms and to all of the people who work to harvest the trials. Also, thanks to the seed companies and forage breeding companies that test their forages in New York.

## ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2016

**Table 1: NY Alfalfa Cultivar Yield Trial Results - 2016 Forage Yields**

T/A = tons per acre dry matter; 5%LSD = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD. CV = A statistical representation of the precision of a trial. Lower is better. Check cultivars are planted in every alfalfa trial except for Roundup Ready Trials. Checks are Pioneer 5312, Oneida VR, Vernal.

Summary of Conventional Alfalfa Cultivar Performance 2014 - 2016			
Cultivars (listed alphabetically)	Yielded in the Top 50% in the Trial(s)*		Total No. of harvests
	Avg. % of Cks	No. of harvests	
55Q27	114	39	39
55V50	118	33	39
55VR06	106	3	3
BRADOR	107	12	12
DG 4210	112	12	12
DKA41-18RR	107	6	18
EZRA	109	39	39
FSG 329	111	9	9
FSG 403LR	115	12	12
FSG 415BR	116	3	3
FSG 424	114	12	12
FSG 426	112	3	3
FSG 524	112	12	21
GA-409	107	6	6
HYBRIFORCE-3400	118	3	3
L-455HD	113	12	12
MASKA	113	12	12
N-R-GEE	105	3	27
PERSIST III	110	12	12
PLUSS III	107	12	12
REGEN	110	12	12
Seedway 9558 SBR	109	9	39

\*Cultivars sorted by total yield over all production years.

\*Data from Conventional Alfalfa Trials, not from no-insecticide or Roundup Ready trials.

\*Data from production year trials only, not from trials sown in 2016.

Cks. = Check Cultivars are Oneida VR, Pioneer 5312, Vernal.

Leroy, Genesee County, Sown May 2013			
Cultivars	2016 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
55V50	6.77	19.69	120
FSG 424	6.90	19.47	118
55Q27	6.49	19.09	116
FSG 403LR	6.47	19.02	116
DG 4210	6.55	18.96	115
FSG 524	6.21	18.35	112
EZRA	5.86	17.81	108
N-R-GEE	5.67	17.67	107
Seedway 9558 SBR	5.50	17.46	106
ONEIDA VR	5.73	17.07	104
5312	5.42	16.68	101
55H94	5.19	16.38	100
VERNAL	4.95	15.61	95
Mean	5.98	18.04	Ck. Mean
5% LSD	0.46	1.06	16.45
CV (%)	6.8	5.1	

Ithaca, Tompkins County, Sown May 2013			
Cultivars	2016 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
55V50	4.60	16.63	120
FSG 403LR	4.68	15.81	114
55Q27	4.69	15.73	114
L 455HD	4.74	15.69	113
EZRA	4.76	15.57	112
FSG 329	4.73	15.39	111
Seedway 9558 SBR	4.52	15.09	109
FSG 424	4.56	15.08	109
DG 4210	4.42	15.03	109
FSG 408DP	4.52	14.97	108
N-R-GEE	4.63	14.91	108
55H94	3.83	14.62	106
DKA41-18RR	4.46	14.31	103
5312	4.14	14.14	102
VERNAL	4.23	14.02	101
FSG 524	3.95	13.76	99
ONEIDA VR	4.11	13.37	97
Mean	4.52	15.11	Ck. Mean
5% LSD	0.37	0.98	13.84
CV (%)	6.5	5.2	

Alfalfa Entered as Experimental in Ithaca 2013			
	2016	3-Yr Total	% of Cks.
DSD02-T*	4.80	16.52	119
DSD05-T*	4.74	16.44	119
DSD01-T*	5.01	16.42	119
DSD04-T*	5.04	16.39	118
DSD06-M*	4.93	16.28	118
DSD07-M*	4.72	15.53	112
SHOCKWAVE BR*	4.39	15.41	111
LS 905*	4.57	14.54	105
OPTIMUS*	4.53	14.44	104

Alfalfa Entered as Experimental in 2013 at Leroy			
	2016	3-Yr Total	3 Yr % of Cks.
Profusion 2HX*	6.77	20.04	122
msSunstra-D17*	6.64	20.02	122
msSunstra-D16*	6.94	19.60	119
msSunstra-D15*	6.69	19.55	119
msSunstra-D11*	6.56	19.46	118
msSunstra-D13*	6.46	19.10	116

Trial, Seeding Year	Soil series, elevation, # of harvests in 2015
Ithaca, 2013, Page 3	Erie channery silt loam, 1000 ft., 3 harvests
Leroy, 2013 Page 3	Ontario loam, Kendaia silt loam, 888 feet 4 harvests
Ithaca, 2014, Page 4	Rhinebeck silt loam, 970 feet, 3 harvests
Richfield Spgs., 2014, Pg 4	Honeoye silt loam, 1400 feet, 3 harvests
Ithaca, 2015, Page 4-5	Williamson silt loam, 1000 ft., 3 harvests
Chazy, 2015, Page 4	Raynham variant silt loam, 185 ft., 3 harvests
Ithaca 2016	Erie Chippewa channery silt loam, 1054 ft. 0 har.
Cobleskill, 2016	Barbour Tioga fine sandy loam, 1170 ft. 1 harvest

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2016 Forage Yields

<b>Ithaca, Tompkins County</b>			
Sown May 2014			
<b>Cultivars</b>	<b>2016 Total</b>	<b>2-Yr</b>	
		<b>Total Season</b>	<b>% of Cks.</b>
- tons per acre dry matter -			
55V50	5.84	11.74	123
55Q27	5.47	10.72	113
MASKA	5.30	10.63	112
REGEN	5.20	10.39	109
EZRA	5.16	10.35	109
BRADOR	5.03	10.27	108
DKA41-18RR	5.18	10.18	107
GA-409	5.04	10.15	107
Seedway 9558 SBR	4.91	10.11	106
55H94	4.63	10.08	106
5312	4.70	9.75	102
VERNAL	4.72	9.59	101
ONEIDA VR	4.56	9.22	97
<i>Mean</i>	5.06	10.19	Ck. Mean
5% LSD	0.25	0.46	9.52
CV (%)	3.9	3.5	
<b>Alfalfa Entered as Experimental in Ithaca 2014</b>			
AFXH134092*	5.66	11.46	120
AFXH134090*	5.41	11.13	117
AFXH134091*	5.44	11.00	115

<b>Richfield Springs, Otsego County**</b>			
Sown May 2014			
<b>Cultivars</b>	<b>2016 Total</b>	<b>2-Yr</b>	
		<b>Total Season</b>	<b>% of Cks.</b>
- tons per acre dry matter -			
MASKA	5.74	10.45	114
L-455HD	5.61	10.27	112
REGEN	5.58	10.21	111
55Q27	5.51	10.07	110
EZRA	5.31	9.95	109
BRADOR	5.20	9.73	106
55V50	5.19	9.46	103
Seedway 9558 SBR	4.99	9.33	102
VERNAL	4.90	9.31	102
55H94	4.92	9.26	101
ONEIDA VR	4.75	9.08	99
5312	4.74	9.08	99
<i>Mean</i>	5.08	9.43	Ck. Mean
5% LSD	0.30	0.52	9.16
CV (%)	4.7	4.4	
<b>Alfalfa Entered as Experimental in Richfield Springs 2014</b>			
AFX083003*	5.49	9.90	108
AFX065033*	5.37	9.72	106
AFX094017*	5.01	9.15	100
AFX085029*	4.81	9.03	99

<b>Ithaca, Tompkins County</b>		
Sown May 2015		
<b>Cultivars</b>	<b>2016 Total</b>	<b>2016 % of Cks.</b>
tons per acre		
HYBRIFORCE-3400	6.28	118
55V50	6.25	118
FSG 415BR	6.16	116
FSG 426	5.95	112
55Q27	5.92	111
EZRA	5.91	111
PLUSS III	5.77	109
PERSIST III	5.77	109
Seedway 9558 SBR	5.71	107
N-R-GEE	5.61	105
ONEIDA VR	5.57	105
DKA41-18RR	5.52	104
VERNAL	5.34	100
55H94	5.33	100
SW 315LH	5.29	99
5312	5.06	95
<i>Mean</i>	5.81	Ck. Mean
5% LSD	0.37	5.32
CV (%)	5.0	

\*\*Severe Yellow Leaf Blotch at Harvest 3 in 2015 and 2016.

<b>Chazy, Clinton County</b>		
Sown May 2015		
<b>Cultivars</b>	<b>2016 Total</b>	<b>2016 % of Cks.</b>
tons per acre		
55Q27	6.38	118
PERSIST III	5.98	111
55V50	5.84	108
EZRA	5.72	106
55VR06	5.71	106
PLUSS III	5.66	105
N-R-GEE	5.65	105
SW 315LH	5.61	104
VERNAL	5.46	101
Seedway 9558 SBR	5.41	100
5312	5.39	100
ONEIDA VR	5.34	99
<i>Mean</i>	5.57	Ck. Mean
5% LSD	0.55	5.40
CV (%)	7.6	

2015 Ithaca Experimental Populations on page 5

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Ithaca, Tompkins County		
Sown May 2015	2016	2016
Experimental Pop.	Total	% of Cks.
- tons per acre -		
AFXH144108*	6.61	124
HYBRIFORCE-3400-OB	6.43	121
HYBRIFORCE-3400-OB	6.32	119
AFX134082*	6.30	118
AFX134080*	6.30	118
AFX143009*	6.27	118

Ithaca, Tompkins County (continued)		
Sown May 2015	2016	2016
Experimental Pop.	Total	% of Cks.
- tons per acre -		
AFX144117*	6.23	117
AFX133033*	6.05	114
RENEW+*	6.04	114
AFX134029*	5.86	110
AFX133032*	5.84	110
4H400*	5.62	106

### ROUNDUP READY ALFALFA TRIALS; Sown in Ithaca NY in 2013 to 2016 and in Cobleskill in 2016

#### Sown May 2013

Released And Experimental Varieties	tons per acre dry matter	
	2016 Total	3-Yr Total
54QR04	4.37	15.22
428RR	4.22	15.19
WL 372HQ.RR	4.15	15.02
DKA44-16RR	4.12	14.91
6497R	4.23	14.87
DKA41-18RR	4.29	14.65
WL 356HQ.RR	4.19	14.59
Mean	4.22	14.92
5% LSD	0.50	0.79
CV (%)	9.0	4.0

#### Sown May 2014

Released And Experimental Varieties	tons per acre dry matter	
	2016 Total	2-Yr Total
54QR04	5.98	11.89
DKA43-22RR	5.61	11.12
DKA40-51RR	5.49	11.07
DKA44-16RR	5.54	11.05
DKA41-18RR	5.26	10.59
Mean	5.58	11.14
5% LSD	0.43	0.70
CV (%)	5.7	4.7

#### Sown May 2015

Released And Experimental Varieties	2016 Total
DKA44-16RR	6.75
55VR06	6.50
DKA41-18RR	6.28
DKA40-51RR	6.15
430 RR LH	6.12
Mean	6.36
5% LSD	0.92
CV (%)	10.8

#### Sown May 2016

Released And Experimental Varieties	Released And Experimental	2016 Harvest
	Varieties	8-Sep
<b>ITHACA</b>	<b>COBLESKILL</b>	<b>T/A</b>
55VR08	DKA44-16RR	1.60
DKA40-51RR	DKA41-18RR	1.56
DKA41-18RR	DKA40-51RR	1.55
DKA44-16RR	55VR08	1.50
RR AphaTron 2XT	Mean	1.55
Severe Drought	5% LSD	0.13
No harvests in 2016	CV (%)	6.1

Trial was cut off on July 25, 2016

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2016 Forage Yields

### 2016 Alfalfa Trials to Test Insect Resistant Cultivars; Trials in Ithaca NY\*

Trials harvested 3 times per production year; 2016 trial on Erie Chippewa channery silt loam; 2015 trial on Williamson silt loam;

2014 trial on Rhinebeck silt loam; 2013 trial on Langford channery silt loam.

**PLH populations were at moderate levels in 2016.**

\*PLH (Potato leafhopper) Damage Score - 1=minor to no damage; 5=severe damage

Oneida VR, 5312, and Vernal are alfalfa cultivars susceptible to potato leafhopper.

#### Sown May 2013

Released And Experimental Varieties	2016 Total t/a	3-Yr Total t/a	PLH Avg. Damage Score 2013-2016
55H94	4.10	16.19	1.3
LANCER	4.48	15.81	2.6
FSG 420LH	4.24	15.66	1.3
5312	4.66	15.63	3.2
ONEIDA VR	4.63	15.26	3.3
VERNAL	4.55	15.26	3.3
<i>Trial Mean</i>	<i>4.17</i>	<i>14.61</i>	Damage Score:
<i>LSD(0.05)</i>	<i>0.38</i>	<i>1.29</i>	1=none
<i>CV(%)</i>	<i>7.1</i>	<i>6.9</i>	5=severe

#### Sown May 2014

Released And Experimental Varieties	2016 Total t/a	2-Yr Total t/a	PLH Avg. Damage Score 30-Jul-15
5312	5.30	10.41	2.0
SW 315LH	5.19	10.25	1.0
55H94	4.91	10.23	1.0
VERNAL	5.06	9.70	2.0
ONEIDA VR	5.01	9.66	2.3
<i>Mean</i>	<i>4.98</i>	<i>9.94</i>	Damage Score:
<i>LSD(.05)</i>	<i>0.31</i>	<i>0.48</i>	1=none
<i>CV(%)</i>	<i>4.9</i>	<i>3.8</i>	5=severe

#### Sown May 2015

Released And Experimental Varieties	2016 Total t/a	2016 PLH Avg. Damage Score 11-Jul
WL 358LH	6.52	2.2
SW 315LH	6.51	1.4
N-R-GEE	6.48	2.7
55H94	6.46	1.6
ONEIDA VR	6.37	3.6
49H344	6.37	1.2
VERNAL	6.17	3.6
430 RR LH	6.11	1.3
<i>Mean</i>	<i>6.32</i>	Damage Score:
<i>5% LSD</i>	<i>0.53</i>	1=none
<i>CV (%)</i>	<i>6.5</i>	5=severe

#### Sown May 2016

Released And Experimental Varieties	
49H344	Data were
55H94	not collected
N-R-GEE	in 2016 due
SW 315LH	to severe
VERNAL	drought.

\*This work is/was supported by the USDA National Institute of Food and Agriculture, Hatch project NYC-149462.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the National Institute of Food and Agriculture (NIFA) or the United States Department of Agriculture(USDA)

**Table 2: Alfalfa Cultivar Features**

For more information log on to the Web:

<http://plbrgen.cals.cornell.edu/research-extension/forage-project/ny-forage-yield-results>

Cultivars listed are currently tested in Cornell Alfalfa Trials. Yield data for cultivars in new trial seedings will be available next year.

Alfalfa Cultivar	Marketing Company	FD	Disease Resistance Ratings*					Marketing Co.		Web or E-mail Address
			BW	VW	FW	AN	PRR	Phone Number		
OPTIMUS	BrettYoung	4	HR	HR	HR	HR	HR	1-800-665-5015	<a href="http://www.brettyoung.ca/">www.brettyoung.ca/</a>	
SHOCKWAVE-BR	BrettYoung	4	HR	HR	HR	HR	HR			
RR APHATRON 2XT	CROPLAN	4	HR	HR	HR	HR	HR	1-651-765-5710	<a href="http://www.croplan.com">www.croplan.com</a>	
HYBRIFORCE-3400	Dairyland Seed Co.	4	HR	HR	HR	HR	HR	1-800-236-0163	<a href="http://www.dairylandseed.com">www.dairylandseed.com</a>	
DKA40-51RR	Dekalb	4	HR	HR	HR	HR	HR	1-800-335-2676	<a href="http://www.monsanto.com">www.monsanto.com</a>	
DKA41-18RR	Dekalb	4	HR	HR	HR	HR	HR			
DKA43-22RR	Dekalb	4	HR	HR	HR	HR	HR			
DKA44-16RR	Dekalb	4	HR	HR	HR	HR	HR			
PERSIST III	Doebler's	4	HR	HR	HR	HR	HR	1-800-853-2676	<a href="http://www.doebler.com">www.doebler.com</a>	
PLUSS III	Doebler's	4	HR	HR	HR	HR	HR			
LANCER	GROWMARK FS	4	HR	HR	HR	HR	HR	1-800-338-4769	<a href="http://www.fsseed.com">www.fsseed.com</a>	
PROFUSION 2HX	King's AgriSeeds	4	HR	HR	HR	HR	HR	1-717-687-6224	<a href="http://www.kingsagriseeds.com/">www.kingsagriseeds.com/</a>	
GA-409	Legacy Seeds	4	HR	HR	HR	HR	HR	1-866-791-6390	<a href="http://www.legacyseeds.com">www.legacyseeds.com</a>	
L 455HD	Legacy Seeds	4	HR	HR	HR	HR	HR			
6497R	Nexgrow Alfalfa	4	HR	HR	HR	HR	HR	1-855-4NEXGROW	<a href="http://www.plantnexgrow.com/">www.plantnexgrow.com/</a>	
54QR04	Pioneer Hi-Bred	4	HR	HR	HR	HR	HR	1-800-247-6803	<a href="http://www.pioneer.com">www.pioneer.com</a>	
55H94	Pioneer Hi-Bred	5	HR	HR	HR	HR	HR			
55Q27	Pioneer Hi-Bred	5	HR	HR	HR	HR	HR			
55V50	Pioneer Hi-Bred	5	HR	HR	R	HR	HR			
55VR06	Pioneer Hi-Bred	5	HR	HR	R	HR	HR			
55VR08	Pioneer Hi-Bred	5		HR	HR	HR	HR			
EZRA	Seedway	3	R	R	HR	HR	R	1-800-836-3710	<a href="http://www.seedway.com">www.seedway.com</a>	
N-R-GEE	Seedway	4	HR	HR	HR	R	R			
REGEN	Seedway	3	R	HR	HR	HR	R			
Seedway 9558 SBR	Seedway	4	R	R	R	HR	MR			
SW 315LH **	Seedway	3	-	HR	-	HR	R			
FSG 329	Seedway	3	HR	HR	HR	HR	HR			
FSG 403LR	Seedway	4	HR	HR	R	HR	HR			
FSG 408 DP	Seedway	4	HR	R	HR	HR	HR			
FSG 415BR	Seedway	4	HR	HR	HR	HR	HR			
FSG 420 LH	Seedway	4	HR	HR	HR	HR	HR			
FSG 424	Seedway	4	HR	HR	HR	HR	HR			
FSG 426	Seedway	4	HR	HR	HR	HR	HR			
430RRLH	Seedway	4	HR	HR	HR	HR	HR			
FSG 524	Seedway	5	HR	HR	HR	HR	HR			
428RR	Seedway/GROWMARK FS	4	HR	HR	HR	HR	HR			
BRADOR	Semican International	4	HR	HR	HR	HR	HR	1-866-736-4226	<a href="http://www.semican.ca">www.semican.ca</a>	
MASKA	Semican International	4	HR	HR			HR			
DG 4210	Crop Production Services	4	HR	HR	HR	HR	HR	1-585-586-1330	<a href="http://www.cropproductionservices.com">www.cropproductionservices.com</a>	
WL 358LH	Seedway; Crop Prod. Services; W-L	4	HR	HR	HR	HR	HR	1-717-917-1609	<a href="http://www.wlresearch.com">www.wlresearch.com</a>	
WL 356HQ.RR	Seedway; Crop Prod. Services; W-L	4	HR	HR	HR	HR	HR			
WL 372HQ.RR	Seedway; Crop Prod. Services; W-L	5	HR	HR	HR	HR	HR			

\*Disease ratings were provided by source companies, and from standard national tests.

\*\*For SW 315LH the fall dormancy rating, BW, VW, FW and PRR ratings are being tested and will be updated as the results become available.

Disease ratings code: HR = High resistance ( 50% or more of the plants resistant), R= Resistance (31-50% resistant), MR = Moderate resistance

FD = fall dormancy. Fall Dormancy ratings of 2,3 or 4 are recommended for New York State.

Cultivars rated R or HR to BW, VW, and Prr should have sufficient disease resistances to perform well in New York State.

\*BW - bacterial wilt, VW-Verticillium wilt, FW-Fusarium wilt, An-Anthracnose, Prr-Phytophthora root rot

**Red Clover and Birdsfoot Trefoil Cultivar Yield Trials- 2016 Ithaca, Tompkins Co.**

T/A = tons per acre dry matter; 5%LSD = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

**RED CLOVER** Checks are Marathon and Cinnamon Plus

Sown on May 3, 2013		2016		2015		2014		3-Yr.	
RED CLOVER		Total	% of	Total	% of	Total	% of	Total	% of
Cultivar/Experimental	Marketing Company	16-Jun	Cks.	Season	Cks.	Season	Cks.	Total	% of Cks
		T/A		T/A		T/A		T/A	
RC0702	DLF International Seeds	2.37	147	5.27	113	6.43	100	14.07	111
Cinnamon Plus	check / Allied Seed, L.L.C.	1.74	108	4.86	104	6.50	101	13.10	103
RC0401	Allied Seed L.L.C.	1.56	97	4.93	106	6.55	101	13.04	102
Marathon	check	1.47	91	4.47	96	6.41	99	12.35	97
TP12B	DLF International Seeds	1.28	80	4.40	94	6.12	95	11.80	93
			Ck. Mean		Ck. Mean		Ck. Mean		Ck. Mean
5% LSD		0.35	1.61	0.58	4.67	0.38	6.46		12.73

Sown on May 7, 2014		2016			2015		
RED CLOVER		Total	% of	% Stand	Total	% of	2-Yr.
Cultivar/Experimental	Marketing Company	Season	Cks.	28-Sep	Season	Cks.	Total % of Cks
		T/A			T/A		T/A
DLFPS RC 9806	DLF International Seeds	2.98	124	44	6.90	105	9.89 105
DLFPS RC 0702	DLF International Seeds	3.30	137	56	6.54	100	9.84 104
Gallant Red	Preferred	3.08	128	54	6.61	101	9.69 103
Cinnamon Plus	check/Allied Seed, L.L.C.	2.93	122	46	6.64	101	9.57 101
Marathon	check	2.79	116	42	6.48	99	9.28 98
DLFPS TP12	DLF International Seeds	2.91	121	34	6.32	96	9.23 98
Emarwan	Pure Seed	2.77	115	32	6.28	96	9.05 96
GO-MER	Grassland Oregon	2.85	118	32	5.48	84	8.34 88
Dynamite	Grassland Oregon	2.03	84	18	5.60	85	7.62 81
			Ck. Mean			Ck. Mean	Ck. Mean
5% LSD		0.37	2.86	9	0.32	6.56	9.43

Sown on May 1, 2015		2016		
RED CLOVER		Total	% of	% Stand
Cultivar/Experimental	Marketing Company	Season	Cks.	14-Oct
		T/A		
FSG 402	Seedway	4.87	101	89
Cinnamon Plus	check/Allied Seed, L.L.C.	4.82	100	88
Marathon	check	4.77	99	88
FF9615	La Crosse Seed	4.71	98	89
Dynamite	Grassland Oregon	4.30	90	86
			Ck. Mean	
5% LSD		0.42	4.80	5

Sown on May 2016	
RED CLOVER	
Cultivar/Experimental	Marketing Company
Bearcat	BrettYoung
Aberclarret	BrettYoung
RC 0702	DLF Pickseed USA Inc.
EVOLVE	DLF Pickseed USA Inc.
TP 12	DLF Pickseed USA Inc.
BAR TP10	Barenbrug
Cinnamon Plus	Check
Marathon	Check

Marketing Company*	Phone	Web address
Allied Seed, L.L.C.	1-208-250-6321	<a href="http://www.alliedseed.com">www.alliedseed.com</a>
DLF International Seeds	1-800-445-2251	<a href="http://www.dlfis.com/">www.dlfis.com/</a>
Grassland Oregon	1-503-566-9900	<a href="http://www.grasslandoregon.com">www.grasslandoregon.com</a>
LaCrosse Seed	1-800-328-1909	<a href="http://www.lacrosseseed.com">www.lacrosseseed.com</a>
Preferred Seed	1-716-895-7333	<a href="http://www.preferredseed.com">www.preferredseed.com</a>
Pure Seed	1-503-651-2130	<a href="http://www.pureseed.com">www.pureseed.com</a>
Seedway	1-800-836-3710	<a href="http://www.seedway.com">www.seedway.com</a>



**PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2016**

**Table 4: 2016 Perennial Forage Grass Yield Summary**

Ithaca, Tompkins Co., Sown 2013,2014, 2015

T/A = tons per acre dry matter

Marketing contacts listed on page 10

5%LSD = claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

Heading date is date when 5 heads in a 3.5 x 16 foot plot were visible.

Trials were harvested three times per year.

Soils: 2013 Niagara silt loam, 2014 Rhinebeck silt loam, 2015 plantings Hudson and Collamer silt loams .

Species/ Cultivar	Marketer	2016			2015		2014		3 or 2-Yr. Total
		Total Season	Oct. % Stand	Heading Date	Total Season	Heading Date	Total Season	Heading Date	
		Sown May 6, 2013							
Timothy		T/A			T/A		T/A	T/A	
Derby	Growmark FS	5.26	65	27-May	5.94	27-May	7.47	28-May	18.66
Alternate	BrettYoung Seeds	4.85	66	29-May	6.23	29-May	7.31	1-Jun	18.38
Php 6C	DLF International Seeds	5.12	65	27-May	6.12	27-May	6.77	29-May	18.01
Zenyatta	DLF International Seeds	5.07	58	27-May	5.80	27-May	7.09	28-May	17.95
TM9701	Allied Seed, L.L.C.	4.95	60	27-May	5.73	27-May	6.97	28-May	17.65
Clair	check	4.86	68	29-May	5.63	29-May	6.61	1-Jun	17.11
Project	BrettYoung Seeds	4.49	54	29-May	5.57	29-May	6.65	29-May	16.71
Climax	check	4.46	64	2-Jun	5.42	29-May	6.15	4-Jun	16.03
	LSD(.05)	0.29	9		0.32		0.49		0.79
		Sown May 12, 2014							
Timothy									
DLFPS TM0704DT	DLF International Seeds	4.03	69	29-May	6.22	29-May			10.25
Zenyatta	DLF International Seeds	3.96	70	27-May	6.05	29-May			10.02
DLFPS PHP6	DLF International Seeds	4.01	74	29-May	5.89	29-May			9.91
Richmond	DLF International Seeds	3.83	70	29-May	5.89	29-May			9.72
Clair	check	3.74	75	31-May	5.58	29-May			9.32
Ovation	Semican	3.61	65	29-May	5.57	27-May			9.18
Kara	Semican	3.46	68	31-May	5.40	29-May			8.86
Switch	BrettYoung Seeds	3.50	70	31-May	4.96	29-May			8.46
TM0603	FFR	3.38	62	6-Jun	4.93	8-Jun			8.31
Climax	check	3.29	71	2-Jun	4.91	3-Jun			8.20
	LSD(.05)	0.40	7		0.39				0.59
		Sown May 1, 2015							
Timothy									
Clair	check	3.94	90	29-May					
GO-120X	Grassland Oregon	3.88	88	2-Jun					
Switch	BrettYoung Seeds	3.68	78	31-May					
Climax	check	3.63	82	2-Jun					
	LSD(.05)	0.23	7						
		Sown May 6, 2013							
Orchardgrass									
Haymaster	Growmark FS	5.18	52	19-May	5.99	17-May	5.61	18-May	16.78
Pennlate	check	5.13	55	16-May	5.86	13-May	5.65	18-May	16.64
Pawnee	Seedway	5.00	55	17-May	5.61	17-May	5.87	21-May	16.48
Potomac	check	4.96	55	16-May	5.70	13-May	5.52	19-May	16.18
Bounty	Seedway	4.87	60	16-May	5.57	17-May	5.62	19-May	16.06
Extend	Seedway	5.13	50	19-May	5.79	13-May	4.93	18-May	15.85
Harvestar	Preferred Seed	4.74	42	19-May	5.60	17-May	4.93	27-May	15.28
OG 62	DLF International Seeds	4.83	45	19-May	5.48	17-May	4.81	23-May	15.12
OG 61 M2	DLF International Seeds	4.59	45	25-May	5.31	19-May	4.56	27-May	14.46
	LSD(.05)	0.3	7		0.30		0.34		0.75
		Sown May 12, 2014							
Orchardgrass									
Persist	Smith Seeds	4.72	61	19-May	5.64	17-May			10.36
Pennlate	check	4.60	64	19-May	5.70	17-May			10.3
Elise	check	4.34	59	19-May	5.77	17-May			10.11
Potomac	check	4.32	64	17-May	5.73	17-May			10.04
GO-MOSO	Grassland Oregon	4.45	56	22-May	5.45	20-May			9.89
OG0604WH	FFR	4.52	55	20-May	5.35	19-May			9.87
GO-BxCR	Grassland Oregon	4.29	60	19-May	5.52	19-May			9.81
OG0506	FFR	4.19	65	19-May	5.45	20-May			9.63
	LSD(.05)	0.36	7		0.44				0.66
		Sown May 1, 2015							
Orchardgrass									
Orca	PICKSEED	5.12	88	17-May					
OG0707	FFR	4.99	89	20-May					
Potomac	check	4.99	85	16-May					
Penn Late	check	4.94	82	16-May					
Extend	Seedway	4.93	88	16-May					
Checkmate	PICKSEED	4.89	81	20-May					
BAR DGL 13047	Barenbrug	4.47	82	25-May					
	LSD(.05)	0.43	7						
		Sown May 6, 2013							
Bromegrass									
York	AMPAC	3.37	65	22-May	4.58	19-May	6.78	23-May	14.73
BAR BiF1GRL	Barenbrug	2.75	58	22-May	4.71	19-May	6.95	23-May	14.41
Peak	Seedway/GROWMARK FS	3.26	60	22-May	4.83	19-May	6.29	23-May	14.39
Success	Allied Seed, L.L.C.	2.96	40	22-May	3.66	19-May	6.11	23-May	12.73
	LSD(.05)	0.38	11		0.34		0.95		0.98

**PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2016**

**PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2016**

**Table 4: 2016 Perennial Forage Grass Yield Summary**

Ithaca, Tompkins Co., Sown 2013,2014, 2015

T/A = tons per acre dry matter

Marketing contacts listed on page 10

5%LSD = claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

Heading date is date when 5 heads in a 3.5 x 16 foot plot were visible.

Trials were harvested three or four times per year.

Soils: 2013 Niagara silt loam, 2014 Rhinebeck silt loam, 2015 plantings Hudson and Collamer silt loams .

Marketer	2016			2015		2014		3 or 2-Yr. Total	
	Total Season	Nov. % Stand	Heading Date	Total Season	Heading Date	Total Season	Heading Date		
<b>Tall Fescue</b>									
<b>Sown May 6, 2013</b>									
Jesup MaxQ	Pennington	5.40	72	22-May	6.66	21-May	7.53	23-May	19.59
KY 31+	check	5.44	62	22-May	6.52	21-May	7.45	23-May	19.40
KY 31-	check	5.31	70	22-May	6.58	21-May	7.32	23-May	19.21
KYFA9821 / AR584	U of Kentucky	5.12	70	22-May	6.48	20-May	7.17	23-May	18.75
KYFA9301 / AR584	U of Kentucky	4.93	70	22-May	6.31	20-May	7.03	23-May	18.27
FTF 70B	DLF International Seeds	5.19	70	25-May	6.15	27-May	6.80	27-May	18.13
FTF 73C	DLF International Seeds	4.92	72	25-May	6.20	27-May	6.60	25-May	17.72
GT213 AR584	AgResearch USA Limited	4.88	72	25-May	6.17	21-May	6.65	23-May	17.70
AGRFA-200 AR584	AgResearch USA Limited	5.05	60	27-May	5.88	27-May	6.02	29-May	16.95
AGRFA-179 AR584	AgResearch USA Limited	4.78	62	29-May	5.89	27-May	5.57	27-May	16.24
	LSD(.05)	0.46	5		0.35		0.38		0.94
<b>Tall Fescue</b>									
<b>Sown May 12, 2014</b>									
TF0402	FFR	4.48	68	25-May	6.99	23-May			11.46
TF0705SL	FFR	4.42	69	25-May	6.98	20-May			11.39
KY 31+	check	4.47	65	25-May	6.85	21-May			11.31
KY 31-	check	4.07	70	25-May	7.14	21-May			11.21
Cajun II	Smith Seeds	4.3	72	22-May	6.86	19-May			11.16
Brava	Allied Seed, L.L.C.	4.39	68	22-May	6.61	20-May			11.00
Cowgirl	Pure Seed	4.14	72	25-May	6.39	21-May			10.53
	LSD(.05)	0.39	6		0.49				0.70
<b>Tall Fescue</b>									
<b>Sown May 1, 2015</b>									
KY31 +	check	6.00	86	22-May					
KYFA930VAR584C2	U of Kentucky	5.92	89	20-May					
KYFA9821/AR584C1	U of Kentucky	5.90	88	20-May					
BAR FA 13131	Barenbrug	5.80	90	22-May					
Bardoux	Barenbrug	5.76	81	25-May					
KYFA1103	U of Kentucky	5.71	89	20-May					
KY 31-	check	5.61	90	20-May					
Bardelice	Barenbrug	5.41	82	27-May					
Bariane	Barenbrug	5.27	82	29-May					
	LSD(.05)	0.47	5						
<b>Meadow Fescue</b>									
<b>Sown May 1, 2015</b>									
Liherold	check	5.16	89	20-May					
Pradel	Barenbrug	4.86	90	25-May					
BAR PPF32	Barenbrug	4.68	78	25-May					
	LSD(.05)	0.36	6						
<b>Perennial Ryegrass and Festulolium</b>									
<b>Festulolium</b>									
<b>Sown May 18, 2013</b>									
Mahulena	DLF International Seeds	5.78	65	17-May	6.94	19-May	7.69	18-May	20.41
FOJTAN	DLF International Seeds	5.93	68	25-May	6.05	27-May	6.96	25-May	18.95
ReBAB	DLF International Seeds	6.02	62	27-May	5.96	27-May	6.79	27-May	18.76
Hipast	DLF International Seeds	5.30	58	27-May	5.89	27-May	6.56	27-May	17.75
Spring Green	check	3.23	42	27-May	4.45	27-May	4.95	27-May	12.63
<b>Perennial Ryegrass</b>									
RAD-MRF145	Allied Seed, L.L.C.	3.10	42	29-May	4.06	27-May	4.60	1-Jun	11.77
Calibra	check	2.86	48	2-Jun	3.77	29-May	4.75	4-Jun	11.38
Linn	check	3.12	58	22-May	3.78	17-May	4.24	23-May	11.14
RAD-MFP142	Allied Seed, L.L.C.	2.52	45	2-Jun	3.55	29-May	4.92	9-Jun	10.99
Full Throttle	Columbia Seeds				Winter killed				
	LSD(.05)	0.62	7		0.47		0.56		0.96
<b>Perennial Ryegrass and Festulolium</b>									
<b>Sown May 12, 2014</b>									
Spring Green (Festulolium)	check	3.35	60	27-May	4.99	27-May			8.34
Tetragain	Pure Seed	3.22	59	29-May	4.80	27-May			8.02
Calibra	check	2.68	62	29-May	4.39	29-May			7.08
Albion	Grassland Oregon	2.80	60	10-Jun	4.18	8-Jun			6.98
Linn	check	2.92	78	22-May	3.78	19-May			6.70
2COW	Pure Seed	3.13	42	27-May	3.56	27-May			6.68
	LSD(.05)	0.40	7		0.45				0.61
<b>Perennial Ryegrass and Festulolium</b>									
<b>Sown May 1, 2015</b>									
Barvitra	Barenbrug	6.55	70	25-May					
PPG-Fest 102 (Festulolium)	Mountain View Seeds	5.98	70	20-May					
Spring Green (Festulolium)	check	5.84	76	25-May					
Remington	Barenbrug	5.42	84	29-May					
Calibra	check	4.65	80	27-May					
LPTNEAROM	Barenbrug	4.54	86	29-May					
Linn	check	4.51	89	17-May					
GO-AXT	Grassland Oregon	4.43	88	27-May					
	LSD(.05)	0.55	7						
<b>Kentucky Bluegrass</b>									
<b>Sown May 1, 2015</b>									
Ginger	Allied Seed, L.L.C.	5.15	88	pre-May 13					
GO-13F	Allied Seed, L.L.C.	4.95	88	pre-May 13					
GO-13NF	Allied Seed, L.L.C.	4.77	84	pre-May 13					
	LSD(.05)	0.21	8						

**Perennial Forage Grass Varieties - 2015 Forage Quality, Maturity and Yield at Spring Growth Boot Stage (See Table 5 below)**

For the first two production years of each grass trial sown, samples for forage quality analyses were taken from each grass variety. Two samples were taken at boot stage or when seed heads were first visible. The data from these samples can be used to compare forage quality of varieties at approximately the same stage of maturity, however on different days.

Grasses increase in fiber concentration (%NDF) and decrease in fiber digestibility (%NDFd) by advancing calendar date and by increasing temperatures. Harvest grass at boot stage for optimum forage quality. Choose grass varieties first by species based in species agronomic characteristics, then by date of boot stage based on planned date of harvest, then by yield and forage quality (low fiber, high fiber digestibility). Predictions of milk per acre, milk per ton, and relative feed quality were found to be very highly correlated with %NDF and yield, thus are no longer reported.

The samples taken in 2016 will be analyzed and reported on in 2017.

**Table 5: Spring Forage Quality Data for Grass Varieties**

	Trial Sown 2013 Boot Stage in 2015			Trial Sown 2014 Boot Stage in 2015			
	Date at Boot Stage	% NDF	% NDFD	Date at Boot Stage	% NDF	% NDFD	
<b>Perennial Ryegrass and Festulolium</b>				<b>Perennial Ryegrass and Festulolium</b>			
Linn	17-May	44	79	Linn	19-May	51	79
Mahulena (Festulolium)	19-May	56	73	2COW	27-May	47	79
RAD-MRF145	27-May	44	79	Tetragain	27-May	48	79
Spring Green (Festulolium)	27-May	47	79	Spring Green (Festulolium)	27-May	48	78
ReBAB (Festulolium)	27-May	52	72	Calibra	29-May	45	80
Hipast (Festulolium)	27-May	53	70	Albion	8-Jun	48	78
FOJTAN (Festulolium)	27-May	55	70				
RAD-MFP142	29-May	39	79				
Calibra	29-May	42	80				
<b>Tall Fescue</b>				<b>Tall Fescue</b>			
KYFA9821 / AR584	20-May	53	72	Cajun II	19-May	56	70
KYFA9301 / AR584	20-May	53	72	Brava	20-May	51	69
KY 31+	21-May	51	73	TF0705SL	20-May	51	69
KY 31-	21-May	52	72	KY 31-	21-May	52	71
GT213 AR584	21-May	52	71	KY 31+	21-May	52	71
Jessup MaxQII	21-May	52	72	Cowgirl	21-May	52	70
AGRFA-179 AR584	27-May	52	68	TF0402	23-May	49	68
AGRFA-200 AR584	27-May	52	68				
FTF 70B	27-May	52	69				
FTF 73C	27-May	53	67				
<b>Orchardgrass</b>				<b>Orchardgrass</b>			
Potomac	13-May	53	85	Elise	17-May	54	80
Extend	13-May	53	85	Pennlate	17-May	55	79
Pennlate	13-May	55	83	Persist	17-May	56	79
Harvestar	17-May	53	80	Potomac	17-May	56	80
Pawnee	17-May	54	80	OG0604WH	19-May	60	81
Haymaster	17-May	54	81	GO-BxCR	19-May	60	80
Bounty	17-May	54	80	GO-MOSO	20-May	56	78
OG 62	17-May	55	79	OG0506	20-May	56	79
OG 61 M2	19-May	58	81				
<b>Timothy</b>				<b>Timothy</b>			
Zenyatta	27-May	59	71	Ovation	27-May	58	75
Php 6C	27-May	59	72	Switch	29-May	56	73
TM9701	27-May	60	71	Kara	29-May	57	73
Derby	27-May	60	71	Clair	29-May	57	72
Climax	29-May	56	75	Zenyatta	29-May	58	70
Clair	29-May	57	73	DLFPS PHP6	29-May	58	71
Project	29-May	59	72	Richmond	29-May	58	71
Alternate	29-May	61	70	DLFPS TM0704DT	29-May	59	71
				Climax	3-Jun	59	67
				TM0603	8-Jun	64	69
<b>Bromegrass</b>							
York	23-May	60	82				
BAR BiF1GRL	23-May	63	80				
Success	23-May	63	79				
Peak	23-May	64	78				

**Perennial Forage Grass Varieties - 2015 Forage Quality, Maturity and Yield at Spring Growth at Harvest 1 (See Table 6 below)**

Two samples were taken from each variety just prior to first harvest. The data from these samples can be used to compare forage quality of varieties on the same day, but at different stages of maturity. Varieties are sorted from earliest heading date to latest heading date within each trial.

Grass varieties that are harvested prior to boot stage such that the seed heads are not harvested in the first cutting, will have seed head emergence at the second harvest. Varieties with seed heads at second harvest can be expected to have lower forage quality at second harvest compared to a variety that does not have seed head emergence at that harvest. Samples were not taken for analyses at the second harvest.

Samples from 2016 will analyzed and forage quality reported in 2017.

**Table 6: 2015 Spring, First Harvest Forage Quality Data for Grass Varieties**

	Trial Sown 2013						Trial Sown 2014				
	First Harvest in 2015-June 3			% Seed	2015		First Harvest in 2015-May 26			% Seed	2015
	Yield (t/a)	%	%	Heads at	Aftermath		Yield (t/a)	%	%	Heads at	Aftermath
Harvest 1	NDF	NDFD	Harvest 2	Forage Yield (t/a)	Harvest 1	NDF	NDFD	Harvest 2	Forage Yield (t/a)		
<b>Perennial Ryegrass</b>						<b>Perennial Ryegrass</b>					
Linn	2.23	56	68	1	1.55	Linn	1.46	51	75	3	2.32
Mahulena (Festulolium)	2.50	61	62	0	4.44	2COW	0.99	47	79	100	2.57
RAD-MRF145	2.08	51	73	13	1.98	Tetragain	1.69	49	79	85	3.11
Spring Green (Festulolium)	2.29	54	72	25	2.17	Spring Gr. (Festulolium)	1.63	48	79	68	3.36
ReBAB (Festulolium)	2.33	57	68	0	3.62	Calibra	1.13	43	80	3	3.26
Hipast (Festulolium)	1.90	56	67	0	4.00	Albion	0.90	43	81	16	3.28
FOJTAN (Festulolium)	2.48	58	67	0	3.57						
RAD-MFP142	1.57	43	78	10	1.98						
Calibra	1.65	46	77	5	2.12						
<b>Tall Fescue</b>						<b>Tall Fescue</b>					
KYFA9821 / AR584	2.69	60	64	0	3.78	Cajun II	1.61	56	66	0	5.25
KYFA9301 / AR584	2.50	60	65	0	3.81	Brava	1.58	56	68	0	5.04
KY 31+	2.55	62	64	0	3.97	TF0705SL	1.62	55	69	0	5.36
KY 31-	2.49	58	65	0	4.09	KY 31-	1.55	54	69	0	5.59
GT213 AR584	2.26	60	65	0	3.91	KY 31+	1.54	55	71	0	5.31
Jessup MaxQII	2.75	61	65	0	3.91	Cowgirl	1.51	55	67	0	4.88
AGRFA-179 AR584	1.98	55	65	0	3.91	TF0402	1.62	53	68	0	5.37
AGRFA-200 AR584	1.99	56	66	0	3.90						
FTF 70B	2.26	56	65	0	3.89						
FTF 73C	2.23	57	64	0	3.98						
<b>Orchardgrass</b>						<b>Orchardgrass</b>					
Potomac	2.25	70	67	0	3.45	Elise	1.69	63	76	0	4.08
Extend	2.28	68	68	0	3.51	Pennlate	1.76	63	76	0	3.94
Pennlate	2.45	68	68	0	3.41	Persist	1.63	64	76	0	4.01
Harvestar	2.62	69	66	0	2.98	Potomac	1.63	63	76	0	4.09
Pawnee	2.43	70	66	0	3.18	OG0604WH	1.66	63	78	0	3.69
Haymaster	2.53	69	67	0	3.46	GO-BxCR	1.54	64	76	0	3.98
Bounty	2.32	71	66	0	3.25	GO-MOSO	1.60	62	76	0	3.84
OG 62	2.29	69	68	0	3.19	OG0506	1.76	64	77	0	3.68
OG 61 M2	2.19	68	70	0	3.12						
<b>Timothy</b>						<b>Timothy</b>					
Zenyatta	3.19	66	64	5	2.62	Ovation	1.90	56	75	20	3.67
Php 6C	3.38	65	64	5	2.74	Switch	1.83	56	76	8	3.13
TM9701	3.21	64	65	5	2.52	Kara	1.85	57	76	20	3.55
Derby	3.24	67	64	5	2.70	Clair	1.83	57	75	30	3.75
Climax	3.01	64	70	5	2.41	Zenyatta	2.19	59	73	19	3.86
Clair	3.15	64	67	5	2.49	DLFPS PHP6	2.03	56	74	18	4.19
Project	3.18	66	67	5	2.40	Richmond	1.96	57	73	28	3.93
Alternate	3.51	66	65	5	2.72	DLFPS TM0704DT	1.93	57	73	25	3.96
						Climax	1.84	55	77	6	3.07
<b>Bromegrass</b>						<b>Bromegrass</b>					
York	2.98	67	69	0	1.60	TM0603	1.76	56	78	7	3.16
BAR BiF1GRL	3.31	71	67	0	1.40						
Success	2.59	68	68	0	1.07						
Peak	3.25	71	67	0	1.59						

**Table 7: Perennial Cool Season Grass Trials Sown in 2016.  
2016 Perennial Grass Trials, one harvest in 2016.**

Variety	Marketing Company	Yield
<b>Timothy</b>	<b>Sown May 11, 2016</b>	T/A
TM9704	Hood River Seed	0.76
Summergraze	BrettYoung	0.72
Varis	Mountain View Seed	0.57
Climax	Check	0.72
	LSD(.05)	0.18

Variety	Marketing Company	Yield
<b>Orchardgrass</b>	<b>Sown May 11, 2016</b>	T/A
Lyra	Hood River Seed	1.08
Treposno	Hood River Seed	1.30
PPG-OG-114	Smith Seed Services	1.21
Trail Burst	BrettYoung	1.26
OLATHE	DLF Pickseed USA Inc.	1.34
INAVALE	DLF Pickseed USA Inc.	1.19
ECHELON	DLF Pickseed USA Inc.	1.32
ENDURANCE	DLF Pickseed USA Inc.	1.41
OG 62	DLF Pickseed USA Inc.	1.26
BAR DG82R01	Barenbrug	1.20
Rushmore II	Mountain View Seed	1.36
Pennlate	Check	1.28
Potomac	Check	1.40
	LSD(.05)	0.15

Variety	Marketing Company	Yield
<b>Meadow Fescue</b>	<b>Sown May 11, 2016</b>	T/A
Raskila	Hood River Seed	1.08
Pardus	Hood River Seed	1.08
Pradel	Check	1.29
	LSD(.05)	0.21

Variety	Marketing Company	Yield 2016	Yield 2015
<b>Annual Grasses</b>	<b>Sown May 1, 2015</b>	T/A	T/A
BECVA	DLF PICKSEED USA	4.47	3.44
DLFPS-LMT-15	DLF PICKSEED USA	4.65	4.17
DLFPS-LHT-7	DLF PICKSEED USA	4.26	3.68
MAXIMO	DLF PICKSEED USA	4.44	3.78
Barextra	Barenbrug	4.12	4.33
BAR LMF 13370	Barenbrug	4.34	3.89
Feast II	Check	4.18	4.01
Gulf	Check	2.73	3.76
	LSD(.05)	0.51	0.89

**2016 Perennial Grass Trials, one harvest in 2016.**

Variety	Marketing Company	Yield
<b>Tall Fescue</b>	<b>Sown May 11, 2016</b>	T/A
Ontaria	Hood River Seed	1.04
Payload	BrettYoung	1.07
FTF 70	DLF Pickseed USA Inc.	0.96
FTF 73	DLF Pickseed USA Inc.	1.00
TOWER	DLF Pickseed USA Inc.	0.86
Teton II	Mountain View Seed	1.04
KY 31+	Check	1.25
KY 31-	Check	1.05
	LSD(.05)	0.10

Variety	Marketing Company	Yield
<b>Festulolium</b>	<b>Sown May 11, 2016</b>	T/A
MAHULENA	DLF Pickseed USA Inc.	1.09
FOJTAN	DLF Pickseed USA Inc.	0.97
PPG-FEST102	Mountain View Seed	1.08
Spring Green	Check	1.10
	LSD(.05)	0.20

Variety	Marketing Company	Yield
<b>Perennial Ryegrass</b>	<b>Sown May 11, 2016</b>	T/A
Barvitra	Barenbrug	1.28
BISON 2	DLF Pickseed USA Inc.	1.44
MAXIMO	DLF Pickseed USA Inc.	0.94
Melpetra	Hood River Seed	1.03
DEXTER 1	DLF Pickseed USA Inc.	1.04
GARBOR	DLF Pickseed USA Inc.	1.08
BAR LP 15261	Barenbrug	0.93
Linn	Check	0.90
Calibra	Check	1.17
	LSD(.05)	0.20

Variety	Marketing Company	Yield 2016
<b>Annual Grasses</b>	<b>Sown May 11, 2016</b>	T/A
NFCG07	Barenbrug	3.44
BAR LM 13370	Barenbrug	2.95
FIRKIN	DLF Pickseed USA Inc.	2.69
BAR LM 15371	Barenbrug	2.66
Feast II	Check	2.56
FOX	DLF Pickseed USA Inc.	2.50
Big Bang	BrettYoung	2.44
Meroa	Smith Seed Services	2.40
Barextra	Barenbrug	2.23
Centurion	Mountain View Seed	2.13
Gulf	Check	1.71
	LSD(.05)	0.34

**Many Thanks to our Cooperators:**

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	Cornell Cooperative Extension
	W.H. Miner Agricultural Research Institute

**Many Thanks to our Summer & Seasonal Employees:**

Seth Paddock, Greg Sherman, Erik Vargas, Abi Cherry,
Charles Chatman, Isabel Pottinger, Milam Milhouse,
Ben Sword, Kelsey Nedd, Paul Osama, Bipra Kundu

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