

NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS SUMMARY FOR 2010 – SEASON TOTALS



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<http://plbrgen.cals.cornell.edu/cals/pbg/programs/departamental/forage/foragetest.cfm>

Introduction Forage variety total season yields from New York in the 2010 growing season are in this report. If yields for each harvest are of interest please review the report titled New York Forage Legume and Grass Variety Yield Trials Summary for 2010 – Harvest and Total Season Summary (available at the website listed above).

Forage yield trials are planted and harvested annually at the Cornell University Agricultural Experiment Station in Ithaca and at three other locations in New York State. Funding for these trials is provided by the companies that submit 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.

2010 New York State

Temperature Averages

Month			
	Temperature	Departure	Rank
March	38.5	6.6	111
April	49.2	5.7	115
May	58.9	3.6	109
June	65.2	1.2	81
July	71.8	3.1	111
August	68.6	1.9	93
September	69.2	3.7	113
October	48.5	0.7	56

Precipitation Averages

Month				
	Precipitation	Departure	Pct Normal	Rank
March	3.43	0.31	109%	75
April	1.93	-1.49	56%	11
May	2.51	-1.17	68%	29
June	5.27	1.27	131%	104
July	3.62	-0.19	94%	57
August	4.41	0.55	114%	90
September	3.30	-0.84	79%	49
October	6.69	3.21	192%	113

Rankings are for 116 years between 1895 and 2010. 1=coolest; 116=warmest or 1=driest; 116=wettest.
http://www.nrcc.cornell.edu/page_summaries.html

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Cornell University

Alfalfa yields for 2010 averaged 6.4 tons per acre dry matter (0.2 tons more than in 2009), red clover yields averaged 3.7 tons per acre dry matter (0.9 tons per acre less than in 2009 due to dry conditions), and perennial forage grass yields averaged 6.1 tons per acre dry matter (0.2 tons per acre less than in 2009).

Cultivar/Variety Selection

Plant breeders continue to develop new and **improved cultivars. Cultivars are continually** released and were selected for improved agronomic characteristics such as yield, disease and insect resistance, forage quality, etc. Seed cost of improved cultivars can be higher than for other cultivars, 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 cultivars. Cultivar performance should be critically evaluated by comparing yield with other cultivars in two or more trials that are in the second or later year of production.

Alfalfa (Tables 1 and 2) cultivars for New York are recommended 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. Cultivars with higher fall dormancy ratings will go dormant later in the fall. Cultivars 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 times between late May and mid-September. Cobleskill was harvested a fourth time in October.

A limited number of potato leafhopper (PLH) resistant alfalfa cultivars are available for producers to plant. These cultivars are tested in trials that are not sprayed with insecticide (page 5).

Red Clover (Table 3) 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.

Birdsfoot Trefoil (Table 3) is a legume that tolerates soils that alfalfa will not be productive on. Birdsfoot trefoil should always be planted in combination with other forages like perennial grasses. Also, birdsfoot trefoil does not tolerate low cutting heights, so it is advisable to leave 5+ inches of stubble in the field.

Grass yield (Tables 4, 5, and 6) trials were fertilized with 315 lb/A ammonium sulfate in early April and after first, second, and third harvests. Forage grass trials are harvested four times between May 20th and November 10th. Brome grass does not tolerate intensive management thus was harvested two times this growing season. Grass yields by species for production year trials harvested 2010 are listed in summary **Table 4, page 8-9**.

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 2009 for the trials planted in 2007 and 2008 are presented in **Tables 5 and 6**. 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 cultivar are taken on two days – two samples at harvest time (May 24 to June 2 in 2010) and two samples at heading date (May 4 to June 6 in 2010). Forage quality estimates from 2010 for trials planted in 2008 and 2009 will be available late winter.

Table 7 is a summary of grasses planted and harvested in 2010.

See [2010 Cornell Guide for Integrated Field Crop Management](#) for more detailed management information (<http://www.fieldcrops.org/Pages/Home.aspx>).

We express appreciation to all of our cooperators in allowing us to plant field plot trials of forages on their farms and to our employees for their hard work in harvesting and maintaining field plots.

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

Table 1: NY Alfalfa Cultivar Yield Trial Results - 2010 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.

Summary of Alfalfa Cultivar Performance 2008 - 2010

Cultivar	Yielded in the Top 50% of the Trial(s)*		Total No. of harvests
	Avg. % of Cks	No. of harvests	
4S417	110	7	7
55V48	112	34	38
6415	108	10	19
6417	111	12	12
A 5225	108	19	19
AMERISTAND 407TQ	109	34	38
DKA43-13	120	6	16
ESCALADE	107	6	6
FSG 329	110	7	7
FSG 406	110	10	19
FSG 408DP	102	4	7
GENOA	110	6	6
GUARDSMAN II	109	28	38
HYBRIFORCE-2400	110	7	7
HYBRIFORCE-2420/WET	107	7	7
KEYSTONE	109	19	19
L 447 HD	113	12	12
LANDER	104	9	19
RADIANCE HD	109	3	3
PGI 459	109	10	19
POUNCE	102	7	7
PROLIFIC II	110	7	7
REBOUND 5.0	115	6	19
REGEN	110	22	38
WL 343HQ	110	25	29
WL 363HQ	108	6	16

*Cultivars sorted by total yield over all production years.

*Data from production year trials only, not from trials sown in 2010.

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

Trial, Seeding Year	Soil series, elevation, # of harvests in 2010
Ithaca, 2007, Page 3	Williamson silt loam, 1000 ft., 3 harvests
Warsaw, 2007, Page 3	Bath-Valois gravelly loam, 1700 ft., 4 harvests
Ithaca, 2008, Page 4	Erie channery silt loam, 1000 ft., 3 harvests
Chazy, 2008, Page 4	Raynham variant silt loam, 185 ft., 3 harvests
Ithaca, 2009, Page 4	Madalin silt loam, 990 ft, 3 harvests
Cobleskill, 2009 Pg.4	Barbour Tioga fine sandy loam, 1170 ft., 4 harvests
Ithaca, 2010, Page 5	Williamson silt loam, 1000 ft., 2 harvests
Perry, 2010 Page 5	Lansing gravelly silt loam, 1390 ft. 2 harvests

Many Thanks to our Cooperators:

Tim Dodge	Cornell University Farm Manager
Thomas Edwards	Cornell Univ. Field Technician
Steve Lis	Cornell Univ. Field Technician
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Dr. Jerry Cherney	Cornell Univ. Forage Agronomist, Professor
Dr. Mike Davis	Cornell Univ. Farm Manager at Chazy
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Ithaca, Tompkins County, Sown May 4, 2007

Cultivars	2010 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
REGEN	5.42	18.81	109
A 5225	5.40	18.43	107
55V48	5.22	18.33	106
GUARDSMAN II	5.03	18.17	105
KEYSTONE	5.31	17.99	104
AMERISTAND 407TQ	5.18	17.95	104
LANDER	4.95	17.93	104
WL 343HQ	5.28	17.92	104
5312	5.10	17.91	104
PGI 459	5.25	17.91	104
FSG 351	4.94	17.77	103
6415	5.09	17.57	102
FSG 406	4.94	17.51	102
VERNAL	5.03	17.15	100
ONEIDA VR	4.79	16.63	96
			Ck. Mean
Trial Mean (T/A)	5.04	17.60	17.23
5% LSD	0.36	0.85	
CV(%)	5.6	3.8	

Warsaw, Wyoming County, Sown May 3, 2007

Cultivars	2010 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
55V48	8.65	25.99	114
KEYSTONE	9.04	25.79	113
FSG 406	8.45	25.24	110
AMERISTAND 407TQ	8.57	25.01	110
PGI 459	8.44	24.95	109
A 5225	8.44	24.93	109
WL 343HQ	8.85	24.76	108
6415	8.30	24.75	108
GUARDSMAN II	8.25	24.69	108
REGEN	8.11	24.62	108
FSG 351	7.95	24.21	106
5312	7.64	23.58	103
ONEIDA VR	7.81	23.40	102
LANDER	7.55	23.12	101
SEEDWAY 9558	7.43	22.90	100
VERNAL	7.04	21.55	94
			Ck. Mean
Trial Mean (T/A)	7.97	23.90	22.84
5% LSD	0.40	0.76	
CV(%)	4.3	2.8	

Alfalfa Entered as Experimental in 2007

Variety Name	Trial Location	Avg. Yield	
		% of Ck. Mean	Ck Mean (T/A)
FSG 528SF	07 Warsaw	107	22.84
4010BR	07 Ithaca	108	17.23
RED FALCON BR	07 Ithaca	108	17.23
DS705 -M	07 Ithaca	107	17.23
DS704-M	07 Ithaca	105	17.23
DS712-M	07 Ithaca	105	17.23
ATTENTION II	07 Ithaca	101	17.23
FSG 528SF	07 Ithaca	99	17.23

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2010 Forage Yields

Ithaca, Tompkins County, Sown May 7, 2008				Chazy, Clinton County, Sown May 9, 2008			
Cultivars	2-Yr			Cultivars	2-Yr		
	2010 Total	Total Season	% of Cks.		2010 Total	Total Season	% of Cks.
- tons per acre dry matter -				- tons per acre dry matter -			
REGEN	4.74	10.15	115	DKA43-13	6.86	12.26	120
55V48	4.64	9.92	112	55V48	6.79	12.25	120
GUARDSMAN II	4.63	9.83	111	WL 343HQ	6.75	12.14	119
GENOA	4.51	9.74	110	L 447 HD	6.52	11.90	116
AMERISTAND 407TQ	4.42	9.74	110	REBOUND 5.0	6.68	11.76	115
L 447 HD	4.38	9.74	110	6417	6.50	11.71	114
6417	4.41	9.57	108	AMERISTAND 407TQ	6.42	11.68	114
WL 363HQ	4.42	9.54	108	GUARDSMAN II	6.27	11.51	112
ESCALADE	4.34	9.45	107	WL 363HQ	6.34	11.32	111
REBOUND 5.0	4.33	9.44	107	REGEN	6.07	11.26	110
SEEDWAY 9558	4.38	9.41	106	L 333 HD	6.02	10.95	107
DKA43-13	4.26	9.36	106	ONEIDA VR	5.93	10.93	107
MARVEL	4.04	9.27	105	SEEDWAY 9558	5.75	10.71	105
L 333 HD	4.23	9.16	103	5312	5.83	10.37	101
5312	4.18	9.10	103	VERNAL	5.06	9.42	92
ONEIDA VR	3.95	8.87	100				Ck. Mean
VERNAL	3.94	8.57	97	Trial Mean (T/A)	6.15	11.11	10.24
			Ck. Mean	5% LSD	0.68	1.16	
Trial Mean (T/A)	4.42	9.62	8.85	CV(%)	7.8	7.4	
5% LSD	0.37	0.57					
CV(%)	6.7	4.7					
Alfalfa Entered as Experimental in 2008							
4030	Ithaca	10.75	122	PERSIST II	Chazy	12.34	120
HYBRIFORCE-2400	Ithaca	10.62	120	EZRA	Chazy	11.26	110
PERSIST II	Ithaca	10.61	120	N-R-GEE	Chazy	10.75	105
PROLIFIC II	Ithaca	10.32	117				
4S417	Ithaca	10.27	116	EZRA	Ithaca	9.88	112
HYBRIFORCE-2420/WET	Ithaca	10.22	116	N-R-GEE	Ithaca	9.72	110
4A415	Ithaca	10.00	113	A 4330	Ithaca	9.62	109
MILESTONE II	Ithaca	9.93	112	A 4440	Ithaca	9.11	103

Ithaca, Tompkins County, Sown May , 2009			Cobleskill, Schoharie County, Sown July 30, 2009		
Cultivars	2010		Cultivars	2010	
	Total	% of Cks.		Total	% of Cks.
	T/A			T/A	
PROLIFIC II	6.99	114	FSG 329	8.88	111
4S417	6.91	112	REGEN	8.68	109
HYBRIFORCE-2400	6.86	111	4S417	8.68	109
HYBRIFORCE-2420/WET	6.71	109	GUARDSMAN II	8.65	108
GUARDSMAN II	6.69	109	HYBRIFORCE-2400	8.63	108
RADIANCE HD	6.68	109	PROLIFIC II	8.54	107
FSG 329	6.67	108	HYBRIFORCE-2420/WET	8.41	105
REGEN	6.57	107	ONEIDA VR	8.22	103
AMERISTAND 407TQ	6.54	106	5312	8.16	102
55V48	6.54	106	FSG 408DP	8.15	102
5312	6.53	106	POUNCE	8.14	102
L 333 HD	6.33	103	WL 363HQ	8.12	102
SYNGENTA 6422Q	6.33	103	LEGENDAIRY 5.0	8.03	100
FSG 408DP	6.32	103	REBOUND 5.0	7.98	100
REBOUND 5.0	6.29	102	55V48	7.97	100
AMERISTAND 403T PLUS	6.28	102	AMERISTAND 403T PLUS	7.77	97
ONEIDA VR	6.02	98	AMERISTAND 407TQ	7.73	97
VERNAL	5.91	96	SYNGENTA 6422Q	7.71	97
		Ck. Mean	VERNAL	7.60	95
Trial Mean (T/A)	6.52	6.15	DKA43-13	7.57	95
5% LSD	0.32		WL 343HQ	7.44	93
CV(%)	4.0		FSG 420 LH	7.41	93
Alfalfa Entered as Experimental in 2009 (Ithaca)					Ck. Mean
DS913-T	7.22	117	Trial Mean (T/A)	8.11	7.99
SONIC	7.08	115	5% LSD	0.40	
RENEW	6.93	113	CV(%)	4.3	
TJA 904	6.83	111	Alfalfa Entered as Experimental in 2009 (Cobleskill)		
TJA 901	6.83	111	mSSUNSTRA-901	9.24	116
TJA 903	6.80	111	mSSUNSTRA-903	8.89	111
DS911-M	6.80	111	TJA 901	8.85	111
DS915-BR	6.73	109	TJA 904	8.82	110
DS912-M	6.67	109	TJA 902	8.77	110
TJA 902	6.64	108	EZRA	8.67	108
EZRA	6.54	106	TJA 903	8.43	106
55V12	6.40	104	54Q32	8.03	101
54Q32	6.35	103	N-R-GEE	7.82	98
N-R-GEE	6.22	101	55V12	7.63	95

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

Table 1 (con't)

2010 Trials - Cultivars Planted	
Ithaca NY Trial	Perry NY Trial
5312	4S417
4A415	5312
53H92	55V48
55V48	CORNERSTONE
BARALFA X42	DG 3210
CORNERSTONE	DG 4210
DG 3210	EZRA
DG 4210	HYBRIFORCE-2400
DKA43-13	ONEIDA VR
EZRA	PGI 557
GUARDSMAN II	PHIRST EXTRA
HYBRIFORCE-2400	PILLAR
EXP. L	PLUSS II
ONEIDA VR	REGEN
PGI 557	RUGGED
PILLAR	SYNGENTA 6305Q
PLUSS II	VERNAL
REGEN	WL 363HQ
RUGGED	WL343HQ
SYNGENTA 6305Q	
VERNAL	
WL 343HQ	
WL 353LH	
WL 363HQ	

On-Line Resources for Forage Management and Cultivar Selection:

Find this report and others at:

<http://plbrgen.cals.cornell.edu/cals/pbg/programs/departmental/forage/foragetest.cfm>Forage Crop Management, Dr. Jerry Cherney:
<http://www.forages.org/>2011 Cornell Guide for Integrated Field Crop Management:
to order hardcopy by phone call: 607-255-7282
to view on-line: <http://ipmguidelines.org/fieldcrops/>Alfalfa Variety Comparison:
<http://www.uwex.edu/ces/ag/alfalfa/index.cfm>New York State Integrated Pest Management Program
<http://nysipm.cornell.edu/fieldcrops/default.asp>North American Alfalfa Improvement Conference:
<http://www.naaic.org/>National Alfalfa and Forage Alliance
<http://www.alfalfa.org/>**Alfalfa Entered as Experimental in 2010**

Ithaca NY Trial	Ithaca NY Trial	Perry NY Trial
4010BR	DSA05-BR	375HY/BR
4030	DSA06-BR	4010BR
PGI 215	DSA07-BR	4030
CW 053015	DSA08-M	PGI 215
DSA01-T	DSA09-L	CW 053015
DSA02-T	HYBRIFORCE-2420	HYBRIFORCE-2420
DSA03-T	N-R-GEE	MSSUNSTRA-A10
DSA04-M	RED FALCON BR	MSSUNSTRA-A11
		N-R-GEE

2010 Alfalfa Trials to Test Insect Resistant Cultivars; Trials in Ithaca NYTrials harvested 3 times per year; 2007 trial on Hudson silty clay, 2009 trial on Langford channery silt loam, 2010 trial on Williamson silt loam.
Oneida VR, 5312, and Vernal are alfalfa cultivars susceptible to potato leafhopper. These cultivars are the check cultivars in each trial.

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

PLH populations were at moderate levels in 2010.

Sown May 9, 2007	2010		3-Yr		4-Yr
	Total Season	% of Cks.	Total Season	% of Cks.	Avg. PLH Damage
Cultivar	T/A		T/A		
FSG 400LH	6.87	105	17.47	105	1.8
5312 (PLH Susceptible)	6.65	102	17.13	103	2.6
53H92	6.48	99	16.48	99	1.2
VERNAL (PLH Susceptible)	6.36	97	16.43	99	2.9
ONEIDA VR (PLH Susceptible)	6.62	101	16.41	99	3.0
EVERGREEN 3	6.33	97	16.34	98	1.4
4P424	6.03	92	15.54	93	1.1
				Ck. Mean	
Trial Mean (T/A)	6.40		16.37	16.66	
5% LSD	0.63				
CV(%)	8.6				

Sown May 12, 2009	2010		2-Yr.
	Total Season	% of Cks.	PLH Damage
Cultivar	T/A		
53H92	5.15	103	1.4
POUNCE	5.12	102	3.2
5312 (PLH Susceptible)	5.11	102	3.8
VERNAL (PLH Susceptible)	5.05	101	4.3
ONEIDA VR (PLH Susceptible)	4.89	97	4.8
FSG 420 LH	4.63	92	1.2
6475H	4.61	92	1.0
		Ck. Mean	
Trial Mean (T/A)	5.16	5.02	
5% LSD	0.37		
CV(%)	6.1		

Sown May 4, 2010	2010 - No Insecticide				PLH Damage 30-Jul
	30-Jul	22-Sep	Total Season	% of Checks	
Entry					
	-- tons per acre dry matter --				
53H92	2.50	1.43	3.93	105	2.3
EXP. L	2.32	1.46	3.77	101	3.7
VERNAL (PLH Susceptible)	2.31	1.46	3.76	101	4.8
5312 (PLH Susceptible)	2.35	1.38	3.74	100	4.8
ONEIDA VR (PLH Susceptible)	2.28	1.40	3.68	99	5.0
WL353 LH	2.23	1.23	3.46	93	2.2
Syngenta 6475H	2.14	1.11	3.26	87	2.7
				Ck. Mean	
Trial Mean (T/A)	2.33	1.35	3.68	3.73	
5% LSD	0.18	0.11	0.23		
CV(%)	6.5	6.8	5.3		

Sown May 4, 2010	2010 + Insecticide	
	Total Season	% of Checks
Entry		
	T/A	
53H92	3.98	101
EXP. L	4.15	105
VERNAL (PLH Susceptible)	3.99	101
5312 (PLH Susceptible)	4.01	101
ONEIDA VR (PLH Susceptible)	3.87	98
WL 353LH	3.59	91
		Ck. Mean
Trial Mean (T/A)	4.05	3.96
5% LSD	0.33	
CV(%)	6.5	

^2008 trial data were not reportable due to excessive soil variability.

Table 2: Alfalfa Cultivar Features

For more information log on to the Web:

<http://plbrgen.cals.cornell.edu/cals/pbg/programs/departmental/forage/foragetest.cfm>

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.	
			BW	VW	FW	AN	PRR	Phone Number	Web or E-mail Address
EXP. L	Allied Seeds LLC	4	HR	HR	HR	HR	HR	1-208-250-6321	www.alliedseed.com
LANDER	Allied Seeds LLC	4	HR	R	LR	MR	MR		
AMERISTAND 404LH	America's Alfalfa	4	HR	HR	HR	HR	HR	1-800-873-2532	http://www.americasalfalfa.com/
AMERISTAND 403T PLUS	America's Alfalfa	4	HR	HR	HR	HR	HR		
AMERISTAND 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR		
ATTENTION II	AMPAC Seed Company	5	HR	R	HR	HR	R	1-800-547-3230	www.ampacseed.com
RADIANCE HD	AMPAC Seed Company	4	HR	R	HR	HR	HR		
BARALFA X42	Barenbrug USA	4	HR	HR	HR	HR	HR	1-800-547-4101	www.barusa.com
RED FALCON BR	Blue River Hybrids	4	HR	HR	HR	HR	HR	1-800-370-7979	www.blueriverorgseed.com/
CORNERSTONE	Chemgro Seeds	4	HR	HR	HR	HR	HR		
KEYSTONE	Chemgro Seeds	3	HR	HR	HR	HR	HR	1-800-346-4769	www.chemgro.com
MILESTONE II	Chemgro Seeds	3	HR	HR	HR	HR	HR		
LEGENDAIRY 5.0	CROPLAN GENETICS	3	HR	HR	HR	HR	HR	1-651-765-5710	www.croplangenetics.com
REBOUND 5.0	CROPLAN GENETICS	4	HR	HR	HR	HR	HR		
HYBRIFORCE-2400	Dairyland Seed Co.	4	HR	HR	HR	HR	HR	1-262-626-3080	http://www.dairylandseed.com
HYBRIFORCE-2420/WET	Dairyland Seed Co.	4	HR	HR	HR	HR	HR		
POUNCE	Doebler's	3	HR	HR	HR	HR	HR	1-800-853-2676	www.doeblers.com
PERSIST II	Doebler's	4	HR	HR	HR	HR	HR		
PILLAR	Doebler's	4	HR	HR	HR	HR	HR		
PHIRST EXTRA	Doebler's	4	HR	HR	HR	HR	HR		
PLUSS II	Doebler's	4	HR	HR	HR	HR	HR		
PROLIFIC II	Doebler's	4	HR	HR	HR	HR	HR		
ESCALADE	GROWMARK FS	5	HR	R	R	R	HR		
MARVEL	GROWMARK FS	4	HR	HR	HR	HR	HR		
6415	Garst Seed Co.	4	HR	HR	HR	HR	HR	1-888-464-2778	www.garstseed.com
6417	Garst Seed Co.	4	HR	HR	HR	HR	HR		
6426	Garst Seed Co.	4	HR	HR	HR	HR	HR		
L 333HD	Legacy Seeds	3	HR	HR	HR	HR	HR	1-866-791-6390	www.legacyseeds.com
L 447HD	Legacy Seeds	4	HR	R	HR	HR	HR		
DKA43-13	Monsanto	4	HR	HR	HR	HR	HR	1-800-335-2676	www.monsanto.com
4A415	Mycogen Seeds	4	HR	HR	HR	HR	HR	1-800-MYCOGEN	www.dowagro.com/mycogen
4P424	Mycogen Seeds	4	HR	HR	HR	HR	HR		
4S417	Mycogen Seeds	4	HR	HR	HR	HR	HR		
SONIC	NuTech Seed	4	HR	HR	HR	HR	HR	1-800-942-6748	www.nutechseed.com
EVERGREEN 3	NK Brand Seeds	4	HR	HR	HR	HR	HR	1-800-445-0956	www.nk-us.com
GENOA	NK Brand Seeds	4	HR	HR	HR	HR	HR		
6305Q	Snygenta	3	HR	HR	HR	HR	HR		
6422Q	Syngenta	4	HR	HR	HR	HR	HR		
6475H	Syngenta	4	HR	HR	HR	HR	HR		
53H92	Pioneer Hi-Bred	3	HR	HR	HR	HR	HR	1-800-247-6803	www.pioneer.com
54Q32	Pioneer Hi-Bred	4	HR	HR	HR	HR	HR		
55V12	Pioneer Hi-Bred	5	R	HR	HR	HR	HR		
55V48	Pioneer Hi-Bred	5	HR	R	HR	HR	HR		
4030	Preferred Seed Co.	4	HR	HR	HR	HR	HR	1-716-895-7333	www.preferredseed.com
A4330	Producer's Choice	4	HR	HR	HR	HR	HR	1-877-560-5181	www.producerschoiceseed.com
A4440	Producer's Choice	4	HR	HR	HR	HR	HR		
A5225	Producer's Choice	5	HR	HR	HR	HR	HR		
PGI 459	Producer's Choice	4	HR	HR	HR	HR	HR		
PGI 557	Producer's Choice	5	HR	HR	HR	HR	HR		
RUGGED	Producer's Choice	3	HR	HR	HR	HR	HR		
EZRA	Seedway/FSG	3	R	R	HR	HR	R	1-800-836-3710	www.seedway.com
GUARDSMAN II	Seedway/FSG	4	HR	HR	HR	HR	HR		
N-R-GEE	Seedway/FSG	4	HR	HR	HR	R	R		
REGEN	Seedway/FSG	3	R	HR	HR	HR	R		
SEEDWAY 9558	Seedway/FSG	3	HR	HR	HR	HR	R		
FSG 329	Seedway/FSG	3	HR	HR	HR	HR	HR		
FSG 351	Seedway/FSG	3	HR	R	HR	HR	HR		
FSG 400 LH	Seedway/FSG	4	HR	HR	HR	HR	HR		
FSG 406	Seedway/FSG	4	HR	HR	HR	HR	HR		
FSG 408 DP	Seedway/FSG	4	HR	R	HR	HR	HR		
FSG 420 LH	Seedway/FSG	4	HR	HR	HR	HR	HR		
DG3210	Crop Production Services	3	HR	HR	HR	HR	HR	1-585-586-1330	www.cropproductionservices.com
DG4210	Crop Production Services	4	HR	HR	HR	HR	HR		
WL 343HQ	Crop Production Services, HYTEST, AgriCulver	4	HR	HR	HR	HR	HR		
WL 353LH	W-L Research	4	HR	HR	HR	HR	HR	1-717-917-1609	www.wlresearch.com
WL 363HQ	Crop Production Services, HYTEST, AgriCulver	5	HR	HR	HR	HR	HR		
5312	check	3	HR	HR	HR	HR	HR		
ONEIDA VR	check	3	R	HR	HR	MR	MR		
VERNAL	check	2	R	-	MR	-	-		

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

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 TRIAL SUMMARY - NEW YORK - 2010

Table 3: Red Clover and Birdsfoot Trefoil Cultivar Yield Trials- 2010 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.

Sown May 9, 2007		2010			2009		2008	3-Yr.	
Red Clover Cultivar/Experimental	Marketing Company*	Total Season	% of Cks.	% Stand 23-Nov	Total Season	% of Cks.	Total Season	Total	% of Cks.
		T/A			T/A		T/A	T/A	
Robust	Seed Research of Oregon	2.40	112	33	5.12	111	5.08	12.70	110
Star Fire II	AgriCulver/ AMPAC Seed	2.51	117	53	4.88	106	5.13	12.50	108
Raven	Seed Research of Oregon	2.30	107	42	4.99	109	4.93	12.42	107
Marathon (check)	WI Check	2.33	108	43	4.49	98	4.87	11.77	102
Duration Extra	Preferred Seed	2.28	106	47	4.50	98	4.56	11.63	101
Arlington (check)	WI Check	1.96	91	14	4.70	102	4.64	11.37	98
Rocket	Seed Research of Oregon	1.99	93	34	4.24	92	4.85	10.96	95
GO-ABT	Grassland Oregon	1.03	48	6	3.75	81	4.64	9.46	82
GO-ABR	Grassland Oregon	1.11	51	5	3.13	68	4.15	8.54	74
			Ck. Mean			Ck. Mean			Ck. Mean
5% LSD		0.49	2.15	10	0.88	4.60	0.50	1.75	11.57

Sown May 7, 2008		2010			2009		2-Yr.	
Red Clover Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 28-Sep	Total Season	% of Cks.	Total	% of Cks.
		T/A			T/A		T/A	
Emerald	Cal/West Seeds	3.62	129	77	7.09	108	10.71	114
FP 345	Allied Seed LLC	3.65	129	67	6.99	107	10.64	114
CW202	Cal/West Seeds	3.59	127	67	6.86	105	10.45	111
RC0006 (expt)	Allied Seed LLC	3.25	115	55	6.81	104	10.06	107
Marathon (check)	WI Check	2.99	106	63	6.60	101	9.59	102
Arlington (check)	WI Check	2.65	94	22	6.49	99	9.14	98
			Ck. Mean			Ck. Mean		Ck. Mean
5% LSD		0.42	2.82	15	0.58	6.54	1.08	9.37

Sown May 12, 2009		2010			2009	
Red Clover Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 1-Nov	26-Aug	% of Checks
		T/A			T/A	
Marathon	WI check	6.25	104	83	1.58	97
C328	WI experimental	6.18	103	85	1.62	99
LS 9703	Lewis Seed	6.17	103	88	1.70	104
StarFire II	AgriCulver/ AMPAC Seed	6.12	102	86	1.67	102
Arlington	WI check	5.76	96	80	1.70	104
			Ck. Mean			Ck. Mean
5% LSD		0.41		4	0.11	1.64

Sown May 12, 2009		2010			2009	
Birdsfoot Trefoil Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 1-Nov	26-Aug	% of Norcen
		T/A			T/A	
Bruce	Semican	4.55	143	70	2.70	151
Pardee '09	Seedway/FSG/GROWMARK	4.55	143	74	2.37	132
WITT	Public Check	3.91	123	52	2.45	137
AC Langile	Public Check	3.81	120	62	2.23	125
Norcen	Public Check	3.17	100	48	1.79	100
LSD(.05)		0.31		4	0.19	

Sown May 11, 2010		2010			2009	
Red Clover Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 1-Nov	26-Aug	% of Norcen
		T/A			T/A	
CW 30091	Cal/West Seeds					
Cinnamon Plus	Allied Seed LLC	****Production Year Data Available in 2011****				
Freedom!MR	Barenbrug USA					

Marketing Company*	Phone	Web address
AgriCulver	1-800-836-3701	www.agriculverseeds.com
Allied Seed LLC	1-208-250-6321	www.alliedseed.com
AMPAC Seed	1-541-928-1651	www.ampacseed.com
Cal/West	1-800-297-3332	www.calwestseeds.com
Dairyland Seed Company	1-800-236-0163	www.dairylandseed.com
Grassland Oregon	1-503-566-9900	
Lewis Seed	1-541-491-3700	www.lewisseed.com
Preferred Seed	1-716-895-7333	www.preferredseed.com
Seed Research of Oregon	1-800-253-5766	www.sroseed.com
Seedway/FSG	1-800-836-3710	www.seedway.com
Semican	1-866-736-4226	www.semican.ca

RED CLOVER AND BIRDSFOOT TREFOIL CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010**Table 4: 2010 Perennial Forage Grass Yield Summary**

Ithaca, Tompkins Co., Sown 2007, 2008, 2009

T/A = tons per acre dry matter

Marketing contacts listed on page 9

5%LSD = claim statistically significant yield differences between two varieties, 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 four times per year, unless otherwise noted.

Soils: 2007 Niagara silt loam, 2008 and 2009 plantings Williamson silt loam.

Marketer	2010			2009			2008		3 or 2-Yr. Total		
	Total Season	Nov. % Stand	Heading Date	Total Season	Oct. % Stand	Heading Date	Total Season	Heading Date			
Timothy											
Sown May 4, 2007											
Derby	Allied Seed Co., L.L.C.	6.93	70	21-May	6.81	70	22-May	6.44	29-May	20.18	
Clair	check	6.83	69	21-May	6.88	74	22-May	6.30	29-May	20.01	
Summit	Seedway/FSG	7.03	70	21-May	6.42	74	22-May	6.12	29-May	19.56	
Barpenta	Barenbrug USA	5.29	68	7-Jun	5.52	73	12-Jun	4.95	10-Jun	15.76	
Climax	check	5.23	66	1-Jun	5.33	74	1-Jun	4.37	9-Jun	14.93	
	LSD(.05)	0.52	6		0.34	6		0.29			
Timothy											
Sown August 7, 2009											
Richmond	check	7.01	80	24-May							
Tuukka	AMPAC	5.98	83	3-Jun							
Climax	check	5.93	80	1-Jun							
	LSD(.05)	0.47	5								
Orchardgrass											
Sown May 4, 2007											
Shiloh II	ProSeeds Marketing	6.96	66	7-May	7.77	70	12-May	2.1	8-May	22.72	
Potomac	check	6.78	60	7-May	7.74	65	11-May	2.0	8-May	22.32	
OG0203G	Allied Seed Co., L.L.C.	6.73	64	7-May	8.00	69	13-May	1.6	7.52	13-May	22.25
Pennlate	check	6.71	61	7-May	7.96	69	13-May	1.0	7.38	11-May	22.05
Profit	AgriCulver/AMPAC Seeds	6.72	63	7-May	7.49	70	13-May	1.0	7.48	13-May	21.70
Warrior II	ProSeeds Marketing	6.36	65	7-May	7.57	70	13-May	1.1	7.51	11-May	21.43
Command	Land O'Lakes	6.34	61	7-May	7.33	69	13-May	1.1	7.24	13-May	20.91
Intensiv	check	6.32	63	19-May	7.51	66	18-May	1.0	6.91	18-May	20.74
	LSD(.05)	0.47	4		0.51	6		0.5			
Leaf Tip Disease 1=min., 3=max.											
Orchardgrass											
Sown August 7, 2009											
IS-OG 52	DLF International Seeds	9.09	76	10-May	1.6						
Potomac	check	8.78	80	4-May	2.1						
Profit-coated	AMPAC	8.55	74	10-May	1.6						
Tekapo-coated	AMPAC	7.94	81	6-May	1.0						
Profit	AMPAC	7.62	76	10-May	1.4						
RAD-LCF21	Lewis Seed	7.56	76	19-May	1.0						
Tekapo	AMPAC	7.12	80	6-May	1.3						
Dividend VL	Allied Seed Co., L.L.C.	6.50	81	21-May	2.8						
AMP-1MB	AMPAC	6.17	74	6-May	2.6						
	LSD(.05)	0.75	5		0.5						
Leaf Tip Disease 1=min., 3=max.											
Tall Fescue											
Sown May 4, 2007											
Select	check	7.19	69	17-May	8.47	69	18-May	8.49	18-May	24.15	
RAD-ERF48	ProSeeds Marketing	7.33	65	13-May	8.37	69	18-May	8.41	16-May	24.11	
Stockman	Seed Research of Oregon	7.21	65	17-May	8.33	65	18-May	8.49	18-May	24.03	
Enhance	Seedway/FSG	6.94	66	19-May	8.32	69	21-May	8.41	22-May	23.68	
IS-FTF 31	DLF International Seeds	7.12	65	17-May	8.19	69	18-May	8.27	16-May	23.58	
KY 31-	check	7.06	69	19-May	8.20	69	21-May	8.18	22-May	23.45	
KYFA9301/AR584	U of Kentucky	6.90	66	19-May	7.96	68	21-May	8.28	22-May	23.14	
TF0202	Allied Seed Co., L.L.C.	6.43	65	21-May	7.81	70	22-May	8.33	22-May	22.58	
BarElite	Barenbrug USA	5.79	69	21-May	7.02	71	24-May	7.15	26-May	19.96	
	LSD(.05)	0.52	6		0.51	4		0.43			
Tall Fescue											
Sown April 25, 2008											
KY 31-	check	7.86	71	19-May	8.28	80	24-May			16.13	
KY 31+	check	7.61	71	21-May	8.18	83	21-May			15.79	
BAR FA BE9301A	Barenbrug USA	7.47	63	21-May	7.67	70	21-May			15.14	
Bariane	Barenbrug USA	6.78	69	23-May	7.30	80	27-May			14.08	
	LSD(.05)	0.46	6		0.42	4					
Tall Fescue											
Sown May 6, 2009											
Goliath	AMPAC	7.32	79	17-May							
Goliath-coated	AMPAC	7.23	79	17-May							
KY 31 E-	check	7.19	78	19-May							
IS-FTF 48	DLF International Seeds	7.00	71	21-May							
KY 31 E+	check	6.99	75	21-May							
Bronson	AMPAC	6.89	79	17-May							
Pradel	check	5.63	73	19-May							
AMP-1MF	AMPAC	5.39	73	19-May							
	LSD(.05)	0.64	4								
Bromegrass											
Sown May 7, 2007											
Hakari	Barenbrug USA	4.73	54	26-May	5.40	81	27-May	6.91	29-May	17.04	
York	AMPAC Seed Co.	5.06	70	18-May	5.09	77	18-May	6.36	18-May	16.51	
Olga	Barenbrug USA	4.70	60	18-May	4.70	72	18-May	6.59	18-May	15.99	
Doina	Barenbrug USA	4.76	59	18-May	4.49	75	18-May	6.48	18-May	15.73	
Peak	Seedway/FSG	4.93	71	18-May	4.92	80	18-May	5.37	18-May	15.22	
Canterbury	Barenbrug USA	3.48	30	25-May	3.54	66	27-May	5.81	26-May	12.83	
	LSD(.05)	0.29	6		0.54	5		0.50			

All varieties are smooth bromegrass except for Canterbury which is a mountain bromegrass and Hakari which is an Alaska bromegrass.

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010**Table 4 (con't): 2010 Perennial Forage Grass Yield Summary**

Ithaca, Tompkins Co., Sown 2007, 2008, 2009

T/A = tons per acre dry matter

Marketing contacts listed below

5%LSD = claim statistically significant yield differences between two varieties, 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 four times per year, unless otherwise noted.

Soils: 2007 Niagara silt loam, 2008 and 2009 plantings Williamson silt loam.

Marketer	2010			2009			2008		3 or 2-Yr. Total		
	Total	Oct.	Heading	Total	Oct.	Heading	Total	Heading			
	Season	% Stand	Date	Season	% Stand	Date	Season	Date			
	T/A			T/A			T/A		T/A		
Bromegrass Sown April 25, 2008											
Peak	Seedway/FSG	5.47	79	19-May	5.87	80	16-May		11.34		
York	AMPAC	5.01	78	19-May	5.93	74	18-May		10.94		
GRL	Barenbrug USA	4.58	79	19-May	5.88	76	18-May		10.46		
	LSD(.05)	0.59	8		0.50	8					
Perennial Ryegrass Sown May 4, 2007											
Quartermaster	Lewis Seed Co.	5.21	48	24-May	5.27	53	24-May	1.9	6.51	26-May	17.00
Lato (Kentucky bluegrass)	Seedway/FSG	5.33	69	7-May	6.85	69	11-May	3.0	4.74	8-May	16.92
Power	AgriCulver / AMPAC	4.73	49	23-May	5.18	54	26-May	1.9	5.75	26-May	15.67
Aberavon	Grassland Oregon	4.81	43	24-May	4.79	50	28-May	2.1	6.00	29-May	15.60
Eurostar	Seed Research of Oregon	4.88	58	23-May	5.11	61	24-May	1.5	5.44	26-May	15.44
Troy (Kentucky bluegrass)	check	5.03	76	4-May	6.10	76	7-May	3.0	4.30	8-May	15.43
Calibra	check	4.49	51	23-May	4.97	56	24-May	1.6	5.65	26-May	15.12
Sierra	Lewis Seed Co.	4.73	58	10-May	4.91	63	18-May	1.4	4.92	11-May	14.56
Citadel	check	4.37	49	24-May	5.05	53	26-May	1.4	4.92	26-May	14.34
GO-ABS	Grassland Oregon	4.57	53	21-May	5.25	59	22-May	1.6	4.36	18-May	14.18
Tonga	AMPAC Seed Co.	4.59	51	18-May	4.52	53	18-May	1.4	4.87	18-May	13.98
GO-ABZ	Grassland Oregon	4.54	56	24-May	4.75	63	26-May	1.8	4.58	26-May	13.87
Linn	check	4.16	53	19-May	4.57	59	18-May	1.6	4.67	11-May	13.40
GO-ABM	Grassland Oregon	4.31	54	23-May	4.80	61	26-May	1.5	4.10	24-May	13.22
	LSD(.05)				0.34	7		0.3	0.54		

Rust Oct.

1=min., 3=max.

Tetraploid perennial ryegrass - Quartermaster, Eurostar, Power, Tonga; Diploid perennial ryegrass - Sierra, GO-ABM, GO-ABS, GO-ABZ; Intermediate ryegrass - GO-ABV

Perennial Ryegrass Sown April 25, 2008										
Rust Oct. 1=min., 3=max.										
Lato (Kentucky bluegrass)	Seedway/FSG	5.24	76	6-May	2.0	6.52	79	11-May		11.77
Bardberly (Kentucky bluegr.)	Barenbrug USA	5.79	85	6-May	2.8	5.73	85	7-May		11.51
Troy (Kentucky bluegrass)	check	5.48	83	4-May	2.8	5.98	83	7-May		11.46
KenBlue (Kentucky bluegr.)	check	5.24	85	4-May	3.0	5.50	85	7-May		10.74
PSG 47 MOL	PICKSEED	4.61	69	23-May	1.4	5.73	80	24-May		10.34
Calibra	check	4.42	66	24-May	1.5	5.85	80	24-May		10.27
Cancan	DLF International Seeds	4.67	60	3-Jun	1.6	5.59	80	12-Jun		10.25
PSG AM 108	PICKSEED	4.63	69	21-May	1.5	5.11	79	24-May		9.74
Pastour	DLF International Seeds	4.73	68	1-Jun	1.4	4.95	81	2-Jun		9.68
Foxtrot	DLF International Seeds	4.61	69	3-Jun	1.6	5.03	81	2-Jun		9.64
Linn	check	4.48	76	16-May	1.9	4.96	84	18-May		9.45
PSG 06 B Lh	PICKSEED	4.56	68	23-May	1.0	4.13	80	24-May		8.69
	LSD(.05)	0.49	5		0.4	0.61	5			

Tetraploid perennial ryegrass PSG 06 B Lh, PSG 47 MOL, PSG AM 108, Calibra; Diploid perennial ryegrass -Cancan, Foxtrot, Pastour, Linn

Perennial Ryegrass Sown May 6, 2009										
AMP-EDR1 (festulolium)	AMPAC	7.13	69	19-May						
AMP-MDR2	AMPAC	6.78	70	21-May						
Spring Green (festulolium)	check	6.77	74	17-May						
Power	AMPAC	6.29	73	21-May						
Duo (festulolium)	AMPAC	5.99	69	19-May						
Calibra	check	5.99	73	24-May						
Tonga	AMPAC	5.95	73	17-May						
Impressario	DLF International Seeds	5.82	73	19-May						
Linn	check	5.68	81	17-May						
Orantas	DLF International Seeds	5.11	78	23-May						
	LSD(.05)	0.43	5							

Tetraploid perennial ryegrass Power, Impresario, Tonga, AMP MDR2, Calibra; Diploid perennial ryegrass -Orantas, Linn

Marketing Company	Marketing Co. Phone Number	Web or E-mail Adc
AgriCulver	1-800-836-3701	www.agriculverseeds.com
Allied Seed Co., L.L.C.	1-208-250-6321	www.alliedseed.com
AMPAC Seed Company	1-800-547-3230	www.ampacseed.com
Barenbrug USA	1-800-547-4101	www.barusa.com
Burlingham Seeds	1-503-623-2306	www.burlinghamseeds.com
Cropmark Seeds Ltd		www.cropmark.co.nz
DLF International Seeds	1-541-369-2251	www.dlfi.com
Grassland Oregon	1-503-566-9900	
Land O' Lakes	1-800-328-9680	www.landolakesinc.com
Lewis Seed Co.	1-541-466-3704	www.lewisseed.com/
Pennington Seed	1-800-285-SEED	www.penningtonseed.com
PICKSEED	1-705-878-9240	http://www.pickseed.com/ECanada/index.html
ProSeeds Marketing	1-541-928-9999	www.proseeds.net
Seed Research of Oregon	1-800-253-5766	www.sroseed.com
Seedway/FSG	1-800-836-3710	www.seedway.com
Smith Seeds		www.smithseed.com/contact.shtml

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2010

Corrected NDFD values - Feb. 2, 2012

Perennial Forage Grass Varieties - 2009 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 2010 will be analyzed and reported on in 2011.

Table 5: Spring Forage Quality Data for Grass Varieties

Trial Sown 2007 Boot Stage in 2009				Trial Sown 2007 Boot Stage in 2009			
	Date at Boot Stage	% NDF	% NDFD		Date at Boot Stage	% NDF	% NDFD
Orchardgrass				Bromegrass			
Potomac	11-May	55	82	Peak	18-May	53	79
Shiloh II	12-May	52	82	Olga	18-May	54	79
Command	13-May	53	81	York	18-May	51	82
Warrior II	13-May	53	81	Doina	18-May	54	79
Profit	13-May	52	82	Hakari	27-May	59	81
Pennlate	13-May	53	81	Canterbury	27-May	58	83
OG0203G	13-May	54	80				
Intensiv	18-May	55	79				
Timothy				Trial Sown 2008 Boot Stage in 2009			
Summit	22-May	59	75		Date at Boot Stage	% NDF	% NDFD
Derby	22-May	60	76	Perennial Ryegrass and Kentucky Bluegrass			
Clair	22-May	58	76	KenBlue (Kentucky bluegr.)	7-May	50	78
Climax	1-Jun	62	74	Barderby (Kentucky bluegr.)	7-May	54	81
Barpenta	12-Jun	69	67	Troy (Kentucky bluegr.)	7-May	52	80
Perennial Ryegrass and Kentucky Bluegrass				Lato (Kentucky bluegr.)	11-May	50	81
Troy (Kentucky bluegr.)	7-May	52	80	Linn	18-May	43	81
Lato (Kentucky bluegr.)	11-May	49	80	Calibra	24-May	45	84
Sierra	18-May	42	83	PSG 06 B Lh	24-May	44	76
Tonga	18-May	38	85	PSG 47 MOL	24-May	44	83
Linn	18-May	43	81	PSG AM 108	24-May	44	82
GO-ABS	22-May	39	87	Pastour	2-Jun	48	81
Calibra	24-May	44	82	Foxtrot	2-Jun	47	83
Eurostar	24-May	41	81	Cancan	12-Jun	54	77
Quartermaster	24-May	44	83				
Citadel	26-May	39	80	Tall Fescue			
GO-ABM	26-May	34	86	KY 31+	21-May	55	69
GO-ABZ	26-May	40	84	BAR FA BE9301A	21-May	50	72
Power	26-May	41	80	KY 31-	24-May	49	72
Aberavon	28-May	42	80	Bariane	27-May	54	68
Tall Fescue				Bromegrass			
IS-FTF 31	18-May	51	76	Peak	16-May	55	77
Select	18-May	53	75	GRL	18-May	57	76
RAD-ERF48	18-May	52	75	York	18-May	55	76
Stockman	18-May	49	77				
Enhance	21-May	50	76				
KY 31-	21-May	52	76				
KYFA9301/AR584	21-May	54	76				
TF0202	22-May	50	76				
BarElite	24-May	55	73				

Corrected NDFD values - Feb. 2, 2012

Perennial Forage Grass Varieties - 2009 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.

Table 6: 2009 Spring, First Harvest Forage Quality Data for Grass Varieties

	Trial Sown 2007					Trial Sown 2007					
	First Harvest in 2009 - May 21			% Seed	Aftermath	First Harvest in 2009 - May 21			% Seed	Aftermath	
	Yield (t/a)	%	%	Heads at Harvest 2	Forage Yield (t/a)	Yield (t/a)	%	%	Heads at Harvest 2	Forage Yield (t/a)	
Orchardgrass						Bromegrass - First Harvest May 27					
OG0203G	2.78	59	75	1	5.22	Olga	2.15	65	70	6	2.55
Potomac	2.58	58	76	1	5.16	Doina	2.03	65	71	8	2.46
Pennlate	2.53	59	75	1	5.43	York	2.01	60	74	2	3.08
Shiloh II	2.42	60	76	1	5.34	Peak	1.89	64	72	3	3.03
Intensiv	2.41	57	77	1	5.10	Hakari	1.82	61	79	90	3.58
Command	2.41	58	75	1	4.93	Canterbury	1.36	60	81	90	2.17
Warrior II	2.32	58	78	1	5.25						
Profit	2.20	57	79	1	5.29						
Timothy						Trial Sown 2008					2009
Clair	2.72	58	74	2	4.17	First Harvest in 2009 - May 26	% Seed	Aftermath			
Derby	2.71	56	77	3	4.10	Yield (t/a)	%	%	Heads at Harvest 2	Forage Yield (t/a)	
Summit	2.47	54	78	2	3.95	Harvest 1	NDF	NDFD			
Climax	2.03	50	83	14	3.30						
Barpenta	1.70	47	87	58	3.82	Perennial Ryegrass and Kentucky Bluegrass					
Perennial Ryegrass						PSG 47 MOL	2.46	43	78	78	3.27
Lato (Kentucky bluegr.)	2.11	55	74	0	4.74	Linn	2.26	54	71	5	2.70
Troy (Kentucky bluegr.)	2.09	56	73	0	4.02	Lato (Kentucky bluegr.)	2.15	60	66	1	4.37
Linn	1.33	42	81	65	3.24	Troy (Kentucky bluegr.)	2.13	63	63	1	3.85
Quartermaster	1.21	39	88	95	4.06	PSG 06 B Lh	1.95	41	76	73	2.18
Sierra	1.18	45	82	85	3.73	Calibra	1.80	42	81	14	4.05
Tonga	1.17	38	84	79	3.35	PSG AM 108	1.72	42	80	9	3.39
Calibra	1.14	37	88	90	3.83	KenBlue (Kentucky bluegr.)	1.70	61	61	1	3.80
Eurostar	1.01	35	84	94	4.10	Barderby (Kentucky bluegr.)	1.51	63	61	1	4.22
GO-ABS	0.97	35	88	81	4.28	Foxtrot	1.18	41	83	65	3.86
Aberavon	0.93	36	87	94	3.86	Pastour	1.05	42	82	65	3.90
GO-ABZ	0.93	34	93	83	3.82	Cancan	1.03	41	80	73	4.55
Power	0.93	38	86	94	4.25						
Citadel	0.87	38	89	90	4.18	Tall Fescue					
GO-ABM	0.83	33	87	88	3.98	KY 31+	2.34	53	68	1	5.94
Tall and Meadow Fescue						KY 31-	2.34	54	68	1	5.84
Select	2.16	53	73	1	6.31	BAR FA BE9301A	2.00	51	71	1	5.67
IS-FTF 31	2.15	52	73	1	6.04	Bariane	1.97	52	70	1	5.33
RAD-ERF48	2.15	52	73	1	6.21						
KYFA9301/AR584	2.02	50	76	1	5.93	Bromegrass					
Enhance	2.02	47	75	1	6.30	GRL	2.60	66	69	1	3.28
Stockman	1.98	52	73	1	6.34	York	2.55	63	69	1	3.37
KY 31-	1.90	48	74	1	6.30	Peak	2.46	65	70	1	3.42
TF0202	1.82	45	78	1	5.99						
BarElite	1.48	49	75	5	5.54						

Table 7: Annual Ryegrass Trials, and Perennial Cool Season Grass Trials Sown in 2010.

Variety	Marketing Company	2010		Heading Date	2009		2-Yr. Total	Variety	Marketing Company	2010 3-Nov	Stand 16-Nov	Leaf Tip Disease 1=min.,3=max.	
		Total Season	% Stand 16-Nov		Total Season	T/A							T/A
Annual Ryegrass								Timothy					
Sown May 6, 2009								Sown May 11, 2010					
AMP-11R	AMPAC	8.59	64	17-May	4.55	13.14							
Bruiser	AgriCulver / AMPAC	5.46	45	17-May	5.27	10.73		Dainiai	Allied Seed	0.41	86		
A 108	PICKSEED	5.69	74	21-May	3.23	8.92		Climax	check	0.39	94		
Feast II	check	7.30	60	21-May	5.49	12.79		Richmond	check	0.55	91		
Feast II	AgriCulver / AMPAC	7.33	59	21-May	5.72	13.06		LSD(.05)		0.19	4		
Fantastic	AgriCulver / AMPAC	4.75	33	17-May	5.12	9.87		Orchardgrass					
PSG 29 BF 06	PICKSEED	8.21	54	21-May	4.17	12.38		Sown May 11, 2010					
06 B Lh	PICKSEED	8.63	63	21-May	3.91	12.54		IS-OG 53	DLF Trifolium	1.21	91	1.0	
MX 108	PICKSEED	7.71	55	21-May	3.54	11.26		Persist	Smith Seeds	1.08	94	1.5	
LSD(.05)		0.61	12		0.52			Anksta	Allied Seed Co., L.L.C.	0.92	95	3.0	
Annual Ryegrass								Tall Fescue					
Sown May 11, 2010								Sown May 11, 2010					
Thunder	Burlingham Seeds	2.76	95					Dg12R01	Barenbrug	1.33	95	1.5	
PS07-2 AR	PICKSEED	1.98	93					Dg83R01	Barenbrug	1.28	95	1.5	
PS-Lm-09-2	PICKSEED	2.29	94					Potomac	check	1.52	95	1.5	
Max	PICKSEED	1.99	93					LSD(.05)		0.14	2	0.7	
AE 110	PICKSEED	2.48	91					Bromegrass					
Big Boss (4n)	Smith Seeds	3.20	95					Sown May 11, 2010					
Ed (2n)	Smith Seeds	3.20	95					BAR BcF1FRRL	Barenbrug	0.86	91		
Feast II	check	3.18	93					BAR BiF1GRL	Barenbrug	0.61	95		
LSD(.05)		0.46	4					Hakari	Barenbrug	1.34	90		
Perennial Ryegrass								Bromegrass					
Sown May 11, 2010								Sown May 11, 2010					
Polim	DLF Trifolium	1.24	94					AC Knowles	Barenbrug	0.55	94		
Kentaur	DLF Trifolium	1.29	93					Peak	Check	0.49	91		
Verseka	Allied Seed Co., L.L.C.	0.93	91					LSD(.05)		0.16	6		
Elena DS	Allied Seed Co., L.L.C.	1.06	91										
Linn	check	0.76	95										
Calibra	check	0.98	94										
LSD(.05)		0.17	3										

2010 Weather Data for Ithaca New York and for New York State

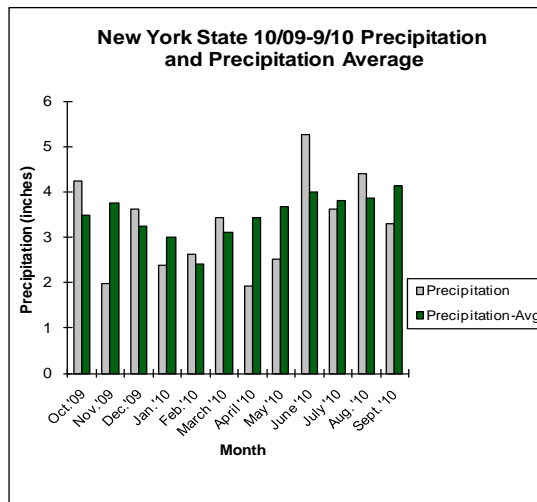
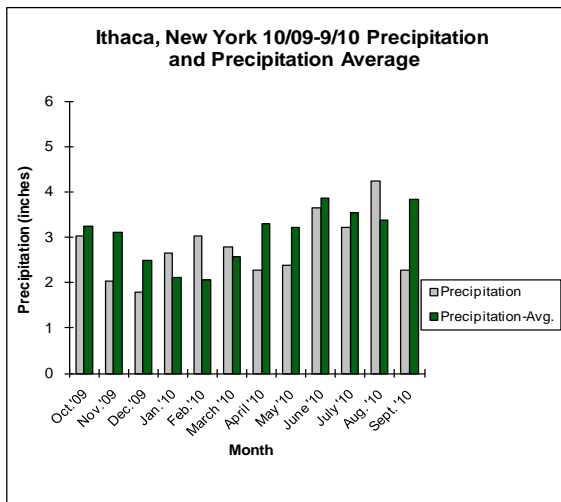
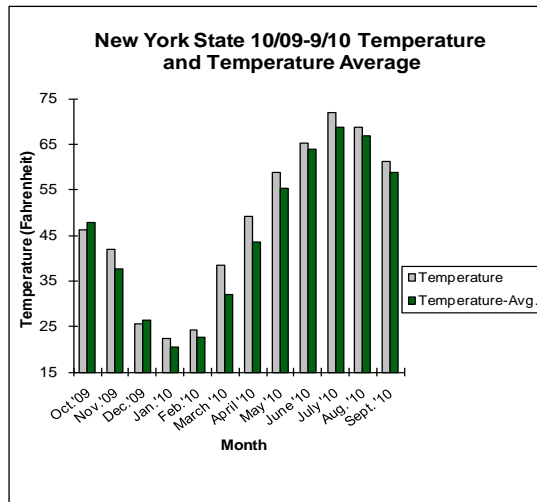
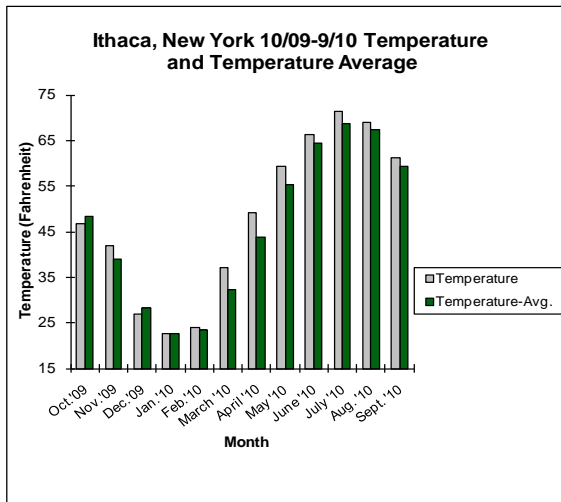


Figure 1: Ithaca, New York 10/09-9/10 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell U. www.nrcc.cornell.edu/page_summaries.html

Figure 2: New York State 10/09-9/10 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell U. www.nrcc.cornell.edu/page_summaries.html

Table 8: Index of Forage Varieties in 2010 Summary Report and Page Number where information is located.

Alfalfa	Pg. No.	Alfalfa	Pg. No.	Tall Fescue	Pg. No.
375HY/BR	5	PILLAR	5,6	AMP-1MF	8
4010BR	3,5	PLUSS II	5,6	BAR FA BE9301A	8,10,11
4030	4,5,6	POUNCE	3,4,5,6	BarElite	8,10,11,12
4A415	4,5,6	PROLIFIC II	3,4,6	Bariane	8,10,11
4P424	5,6	RADIANCE HD	3,4,6	Bronson	8
4S417	3,4,5,6	REBOUND 5.0	3,4,6	Cajun II	12
5312	3,4,5,6	RED FALCON BR	3,5,6	Enhance	8,10,11
53H92	5,6	REGEN	3,4,5,6	Goliath	8
54Q32	4,6	RENEW	4	Goliath-coated	8
55V12	4,6	RUGGED	5,6	IS-FTF	8,10,11
55V48	3,4,5,6	SEEDWAY 9558	3,4,6	IS-FTF 48	8
6305Q	5,6	SONIC	4,6	KY 31-	8,10,11,12
6415	3,6	TJA 901	4	KY 31 E+	8,10,11,12
6417	3,4,6	TJA 902	4	KYFA9301/AR584	8,10,11
6422Q	4,6	TJA 903	4	Pradel	8
6426	6	TJA 904	4	RAD-ERF48	8,10,11
6475H	5,6	VERNAL	3,4,5,6	Select	8,10,11
A 4330	4,6	WL 343HQ	3,4,5,6	Stockman	8,10,11
A 4440	4,6	WL 353LH	5,6	TF0202	8,10,11
A 5225	3,6	WL 363HQ	3,4,5,6	Bromegrass	
AMERISTAND 403T PLUS	4,6			AC Knowles	12
AMERISTAND 404LH	6	Red Clover	Pg. No.	BAR BcF1FRRL	12
AMERISTAND 407TQ	3,4,6	Arlington	7	BAR Bif1GRL	12
ATTENTION II	3,6	C328	7	Canterbury	8,10,11
BARALFA X42	5,6	Cinnamon Plus	7	Doina	8,10,11
CORNERSTONE	5,6	CW 30091	7	GRL	9,10,11
CW 053015	5	CW202	7	Hakari	8,10,11,12
DG3210	5,6	Duration Extra	7	Olga	8,10,11
DG4210	5,6	Emerald	7	Peak	8,9,10,11,12
DKA43-13	3,4,5,6	FP 345	7	York	8,9,10,11,12
DS704-M	3	Freedom!MR	7	Perennial Ryegrass	
DS705 -M	3	GO-ABR	7	Aberavon	9,10,11
DS712-M	3	GO-ABT	7	AMP-EDR1 (festulolium)	9
DS911-M	4	LS 9703	7	AMP-MDR2	9
DS912-M	4	Marathon	7	Barderby (Kentucky bluegr.)	9,10,11
DS913-T	4	Raven	7	Calibra	9,10,11,12
DS915-BR	4	RC0006 (expt)	7	Cancan	9,10,11
DSA01-T	5	Robust	7	Citadel	9,10,11
DSA02-T	5	Rocket	7	Duo (festulolium)	9
DSA03-T	5	Star Fire II	7	Elena DS	12
DSA04-M	5			Eurostar	9,10,11
DSA05-BR	5	Birdsfoot Trefoil		Foxtrot	9,10,11
DSA06-BR	5	AC Langile	7	GO-ABM	9,10,11
DSA07-BR	5	Bruce	7	GO-ABS	9,10,11
DSA08-M	5	Norcen	7	GO-ABZ	9,10,11
DSA09-L	5	Pardee	7	Impressario	9
ESCALADE	3,4,6	WITT	7	KenBlue (Kentucky bluegr.)	9,10,11
EVERGREEN 3	5,6			Kentaur	12
EXP. L	5,6	Timothy		Lato (Kentucky bluegr.)	9,10,11
EZRA	4,5,6	Barpenta	8,10,11	Linn	9,10,11,12
FSG 329	3,4,6	Clair	8,10,11	Orantas	9
FSG 351	3,6	Climax	8,10,11,12	Pastour	9,10,11
FSG 400 LH	5,6	Dainiai	12	Polim	12
FSG 406	3,6	Derby	8,10,11	Power	9,10,11
FSG 408 DP	3,4,6	Richmond	8,12	PSG 06 B Lh	9,10,11
FSG 420 LH	4,5,6	Summit	8,10,11	PSG 47 MOL	9,10,11
FSG 528SF	3	Tuukka	8	PSG AM 108	9,10,11
GENOA	3,4,6			Quartermaster	9,10,11
GUARDSMAN II	3,4,5,6	Orchardgrass		Sierra	9,10,11
HYBRIFORCE-2400	3,4,5,6	AMP-1MB	8	Spring Green (festulolium)	9
HYBRIFORCE-2420/WET	3,4,5,6	Anksta	12	Tonga	9,10,11
KEYSTONE	3,6	Command	8,10,11	Troy (Kentucky bluegr.)	9,10,11
L 333 HD	4,6	Dg12R01	12	Verseka	12
L 447 HD	3,4,6	Dg83R01	12	Annual Ryegrass	
LANDER	3,6	Dividend VL	8	AMP-11R	12
LEGENDAIRY 5.0	4,6	Intensiv	8,10,11	06 B Lh	12
MARVEL	4,6	IS-OG 52	8	A 108	12
MILESTONE II	4,6	IS-OG 53	12	AE 110	12
mSSUNSTRA-901	4	OG0203G	8,10,11	Big Boss (4n)	12
mSSUNSTRA-903	4	Pennlate	8,10,11	Bruiser	12
mSSUNSTRA-A10	5	Persist	12	Ed (2n)	12
mSSUNSTRA-A11	5	Potomac	8,10,11,12	Fantastic	12
N-R-GEE	4,5,6	Profit	8,10,11	Feast II	12
ONEIDA VR	3,4,5,6	Profit-coated	8	Max	12
PERSIST II	4,6	RAD-LCF21	8	MX 108	12
PGI 215	5	Shiloh II	8,10,11	PS07-2 AR	12
PGI 459	3,6	Tekapo	8	PSG 29 BF 06	12
PGI 557	5,6	Tekapo-coated	8	PS-Lm-09-2	12
PHIRST EXTRA	5,6	Warrior II	8,10,11	Thunder	12