

NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS SUMMARY FOR 2012 – SEASON TOTALS



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

Introduction Forage variety total season yields from New York in the 2012 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 2012 – 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.

2012 New York State

Temperature Averages

Month			
	Temperature	Departure	Rank
March	43.1	11.2	118
April	44.0	-0.5	66
May	60.4	5.1	115
June	64.8	0.4	69
July	71.7	2.9	111
August	68.7	1.5	96
September	60.0	0.4	66
October	50.7	2.6	93

Precipitation Averages

Month				
	Precipitation	Departure	Pct Normal	Rank
March	1.99	-1.07	65%	19
April	2.86	-0.56	83%	43
May	4.13	0.48	113%	86
June	3.49	-0.60	85%	62
July	3.22	-0.82	79%	46
August	3.40	-0.47	87%	52
September	4.80	0.81	120%	99
October	4.88	0.93	123%	99

Rankings are for 118 years between 1895 and 2012. 1=coolest; 118=warmest or 1=driest; 118=wettest.
http://www.nrcc.cornell.edu/page_summaries.html

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Cornell University

Alfalfa yields for 2012 averaged 5.0 tons per acre dry matter (0.4 tons less than in 2011), red clover yields averaged 2.8 tons per acre dry matter (0.5 tons per acre less than in 2011), and perennial forage grass yields averaged 4.8 tons per acre dry matter (0.8 tons per acre less than in 2011).

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 or four times between late May and mid-September. In 2012, the trial planted in 2011 at Chazy in Northern NY winterkilled. This trial was replanted. The trial in Western New York at True Farms is completed after the second production year due to stand loss. 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 normally harvested four times between May 20th and November 3rd. Bromegrass does not tolerate intensive management thus was harvested three times this growing season. Due to drought in 2012, some grass trials were harvested just twice. Grass yields by species for production year trials harvested 2012 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 2011 for the trials planted in 2009 and 2010 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 26 to June 3 in 2011) and two samples at heading date (May 12 to June 7 in 2011). Forage quality estimates from 2012 for trials planted in 2010 and 2011 will be available late winter.

Table 7 is a summary of grasses planted and harvested in 2012.

See [2013 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 - 2012**Table 1: NY Alfalfa Cultivar Yield Trial Results - 2012 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 2010 - 2012

Cultivar	Yielded in the Top 50% of the Trial(s)*		
	Avg. %	No. of	Total No.
	of Cks	harvests	of harvests
6305Q	114	14	14
4A415	105	6	6
4S417	113	20	28
55V50	113	37	37
6422Q	110	11	20
AMERISTAND 407TQ	110	12	23
DG 3210	121	8	14
DG 4210	113	17	17
DKA43-13	105	6	17
EZRA	108	9	17
FSG 329	111	20	20
GUARDSMAN II	108	26	26
GUNNER	108	3	3
HYBRIFORCE-2400	111	26	34
HYBRIFORCE-2420/WET	109	20	20
LEGENDAIRY 5.0	110	11	11
PERSIST II	107	3	3
PGI 215	107	3	3
PGI 557	123	8	17
PHIRST EXTRA	115	11	11
PILLAR	120	14	14
PLUSS II	115	14	14
PROLIFIC II	111	23	23
RADIANCE HD	110	9	9
REGEN	108	17	34
WL 343HQ	124	8	25
WL 363HQ	113	25	25

*Cultivars sorted by total yield over all production years.

*Data from production year trials only, not from trials sown in 2012.

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

Trial, Seeding Year	Soil series, elevation, # of harvests in 2012
Ithaca, 2009, Page 3	Madalin silt loam, 990 ft, 3 harvests
Cobleskill, 2009 Pg.	Barbour Tioga fine sandy loam, 1170 ft., 4 harvests
Ithaca, 2010, Page	Williamson silt loam, 1000 ft., 3 harvests
Perry, 2010 Page	Lansing gravelly silt loam, 1390 ft. 4 harvests
Ithaca, 2011, Page	Erie channery silt loam, 1000 ft., 3 harvests
Chazy, 2011, Page	Raynham variant silt loam, 185 ft., 3 harvests
Ithaca, 2012, Page	Williamson silt loam, 1000 ft., 0 harvests
Cobleskill, 2012 Pg.	Barbour Tioga fine sandy loam, 1170 ft., 0 harvests

Alfalfa Entered as Experimental in 2009 at Ithaca

Cultivar/ Experimental	2012 Total	3-Yr Total Season	3 Yr % of Cks.
MAGNUM 7*	3.77	17.18	119
SONIC*	3.60	16.86	117
RENEW*	3.54	16.57	115
TJA 904*	3.72	16.54	115
KF401B*	3.54	16.45	114
4A415*	3.56	16.37	114
TJA 901*	3.63	16.35	113
TJA 903*	3.51	16.24	113
TJA 902*	3.56	16.20	112
NSF-7011ML*	3.60	16.17	112
EZRA*	3.37	15.49	107
54Q32*	3.40	15.44	107
55V12*	3.28	15.36	107
N-R-GEE*	3.39	15.24	106

Alfalfa Entered as Experimental in 2009 at Cobleskill

Cultivar/ Experimental	2012 Total	3-Yr Total Season	3 Yr % of Cks.
msSunstra-901*	7.56	23.35	119
msSunstra-903*	7.54	22.81	116
TJA 901*	7.42	22.36	114
TJA 902*	7.42	22.25	113
TJA 904*	7.20	22.09	112

Ithaca, Tompkins County, Sown May 7, 2009

Cultivars	3-Yr		
	2012 Total	Total Season	% of Cks.
- tons per acre dry matter -			
4S417	3.65	16.56	115
HYBRIFORCE-2400	3.55	16.53	115
PROLIFIC II	3.53	16.39	114
55V48	3.49	16.21	113
HYBRIFORCE-2420/WET	3.54	16.09	112
AMERISTAND 407TQ	3.38	16.00	111
RADIANCE HD	3.40	15.82	110
GUARDSMAN II	3.29	15.82	110
FSG 329	3.30	15.80	110
REGEN	3.45	15.72	109
5312 (check)	3.43	15.40	107
6422Q	3.25	15.32	106
REBOUND 5.0	3.35	15.18	105
AMERISTAND 403T PLUS	3.30	15.10	105
FSG 408DP	3.31	15.08	105
L333 HD	3.16	14.79	103
ONEIDA VR (check)	3.25	14.42	100
VERNAL (check)	3.02	13.41	93
Mean	3.38	15.61	14.41
5% LSD	0.23	0.68	
CV (%)	5.5	3.5	

Cobleskill, Schoharie County, Sown July 30, 2009

Cultivars	3-Yr		
	2012 Total	Total Season	% of Cks.
- tons per acre dry matter -			
FSG 329	7.13	22.10	112
4S417	7.31	22.00	112
HYBRIFORCE-2400	7.18	21.89	111
6422Q	7.80	21.69	110
LEGENDAIRY 5.0	7.41	21.62	110
WL 363HQ	7.37	21.59	110
REGEN	6.83	21.57	110
PROLIFIC II	6.94	21.56	110
GUARDSMAN II	6.73	21.36	108
55V48	7.05	21.29	108
REBOUND 5.0	7.19	21.11	107
HYBRIFORCE-2420/WET	6.90	21.06	107
AMERISTAND 407TQ	7.35	20.95	106
DKA43-13	7.27	20.77	105
FSG 408DP	6.61	20.60	105
WL 343HQ	7.31	20.55	104
5312 (check)	6.32	20.37	103
ONEIDA VR (check)	6.30	20.30	103
AMERISTAND 403T PLUS	6.66	20.15	102
POUNCE	6.09	19.67	100
FSG 420 LH	6.26	19.24	98
VERNAL (check)	5.65	18.40	93
Trial Mean (T/A)	6.87	20.88	14.41
5% LSD	0.38	0.85	19.69
CV (%)	4.9	3.6	

Alfalfa Entered as Experimental in 2009 at Cobleskill

Cultivar/ Experimental	2012 Total	3-Yr Total Season	3 Yr % of Cks.
TJA 903*	7.14	21.63	110
54Q32*	7.49	21.52	109
EZRA*	6.71	21.44	109
55V12*	7.12	21.10	107
N-R-GEE*	6.44	19.76	100

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012**Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2012 Forage Yields**

Perry, Wyoming County, Sown April 2010				Ithaca, Tompkins County, Sown May 2010			
Cultivars	2012 Total	2-Yr		Cultivars	2012 Total	2-Yr	
		Total Season	% of Cks.			Total Season	% of Cks.
- tons per acre dry matter -				- tons per acre dry matter -			
PILLAR	4.17	10.12	129	PILLAR	6.04	12.83	110
DG 4210	3.96	9.92	127	EZRA	6.13	12.78	110
55V48	3.82	9.89	126	DG 4210	5.82	12.50	107
WL 343HQ	4.04	9.73	124	REGEN	5.91	12.50	107
WL 363HQ	3.85	9.72	124	BARALFA X42	6.05	12.49	107
6305Q	4.04	9.71	124	55V48	5.87	12.48	107
PLUSS II	3.88	9.71	124	HYBRIFORCE-2400	5.97	12.47	107
PGI 557	3.98	9.62	123	PLUSS II	5.76	12.31	106
DG 3210	3.86	9.51	121	DKA43-13	5.51	12.28	105
PHIRST EXTRA	3.72	9.48	121	WL 363HQ	5.70	12.24	105
CORNERSTONE	3.77	9.43	120	6305Q	5.74	12.23	105
HYBRIFORCE-2400	3.62	9.33	119	GUARDSMAN II	5.82	12.22	105
4S417	3.57	9.20	117	4A415	5.77	12.17	105
EZRA	3.56	8.97	114	5312 (check)	5.67	11.99	103
REGEN	3.43	8.79	112	DG 3210	5.76	11.92	102
5312 (check)	3.24	8.40	107	PGI 557	5.69	11.89	102
RUGGED	3.29	8.35	107	WL 343HQ	5.45	11.82	101
ONEIDA VR (check)	3.17	7.92	101	CORNERSTONE	5.74	11.81	101
VERNAL (check)	3.05	7.19	92	53H92	5.64	11.80	101
			Ck. Mean	WL 353LH	5.75	11.80	101
Mean	3.65	9.18	7.84	RUGGED	5.71	11.79	101
5% LSD	0.21	0.39		VERNAL (check)	5.66	11.69	100
CV (%)	5.0	3.7		ONEIDA VR (check)	5.41	11.27	97
Alfalfa Entered as Experimental in 2010 (Perry)				Ck. Mean			
4030*	4.01	10.15	129	Mean	5.82	12.23	11.65
msSunstra-A10*	4.02	10.12	129	5% LSD	0.33	0.55	
PROFUSION-HX*	3.81	9.70	124	CV (%)	4.6	3.6	
4010BR*	3.88	9.59	122	Alfalfa Entered as Experimental in 2010 (Ithaca)			
CW 053015*	3.90	9.54	122	CRAVE*	6.38	13.39	115
375HY/BR*	3.52	9.23	118	STOCKPILE*	6.20	13.16	113
PGI 215*	3.65	8.89	113	PERSIST III*	6.14	13.05	112
N-R-GEE*	3.42	8.88	113	4030*	6.18	12.89	111
HYBRIFORCE-2420*	3.50	8.83	113	SHOCKWAVE-BR*	6.23	12.85	110
				MAGNUM 7-WET*	6.20	12.81	110
Ithaca, Tompkins County, Sown May 2011				MARINER IV*	6.10	12.77	110
Cultivars	2012	2012	% of Cks	DSA04-M*	6.02	12.62	108
	Total	Total		CW 053015*	5.94	12.42	107
	T/A			RED FALCON BR*	5.92	12.37	106
AMERISTAND 407TQ	5.17	110		DSA09-L*	5.96	12.35	106
PROLIFIC II	5.15	109		SENECA*	5.86	12.11	104
55V50	5.15	109		4010BR*	5.93	12.09	104
PHIRST EXTRA	5.13	109		HYBRIFORCE-2420*	5.71	12.01	103
GUNNER	5.09	108		PGI 215*	5.63	11.73	101
PGI 215	5.06	107		N-R-GEE*	5.39	11.67	100
EZRA	5.05	107					
PERSIST II	5.04	107		Ithaca, Tompkins County, Sown May 2011			
DG 4210	5.02	106		Experimental Alfalfa	2012	2012	% of Cks
WL 354HQ	4.94	105			Total	Total	
REBOUND 6.0	4.90	104			T/A		
PGI 557	4.88	103		DSB01-T*	5.79	123	
VERNAL (check)	4.83	102		MAGNUM 7-WET*	5.78	122	
ARCHER III	4.77	101		SENECA*	5.67	120	
5312 (check)	4.74	100		DSB03-T*	5.67	120	
ONEIDA VR (check)	4.57	97		DSB07-L*	5.61	119	
N-R-GEE	4.43	94		DSB09-M*	5.53	117	
		Ck. Mean		DSB05-BR*	5.52	117	
Mean	5.07	4.72		DSB02-T*	5.45	115	
5% LSD	0.43			DS704-M*	5.40	114	
CV (%)	6.7			STOCKPILE*	5.33	113	
				DSB04-BR*	5.26	111	
				FG 45A119*	5.23	111	
				SEEDWAY 9558 SBR*	5.19	110	
				CW 0550055*	4.60	98	

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012**Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2012 Forage Yields**

2012 Trials - Cultivars Planted		
Ithaca NY	Cobleskill NY	Chazy NY (2011 replant)
5312	5312	5312
55H94	55H94	55V50
55V50	55V50	ARCHER III
BRADOR	BRADOR	DG 4210
EZRA	EZRA	GUNNER
GEMSTONE	GEMSTONE	ONEIDA VR
LEGACY 449APH2	MAGNITUDE	PERSIST II
MAGNITUDE	MARINER IV	PGI 215
MARINER IV	MASKA	PGI 557
MASKA	N-R-GEE	PHIRST EXTRA
N-R-GEE	ONEIDA VR	PROLIFIC II
ONEIDA VR	REGEN	REBOUND 6.0
REGEN	VERNAL	VERNAL
VERNAL		WL 354HQ

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/>2012 Cornell Guide for Integrated Field Crop Management: to order hardcopy by phone call 607-255-7282 or 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/>North American Alfalfa Improvement Conferer <http://www.naaic.org/>National Alfalfa and Forage Alliance <http://www.alfalfa.org/>**2012 Trials - Experimentals Planted**

Ithaca NY Trial	Cobleskill NY	Chazy NY (2011 replant)
505004*	CRAVE*	CW 0550055*
CRAVE*	CW 085028*	FG 45A119*
CW 085028*	FG 48A177*	msSunstra-803*
DSC01-T*	msSunstra-803*	msSunstra-B12*
DSC02-T*	msSunstra-803QR*	SEEDWAY 9558 SBR*
DSC03-BR*	msSunstra-C10*	SENECA*
DSC04-BR*	msSunstra-C11*	
DSC05-BR*	msSunstra-C12*	
DSC06-M*	msSunstra-C13*	
FG 48A177*	msSunstra-C14*	
MAGNUM 7*	msSunstra-C15*	
MAGNUM 7-Wet*	PERSIST III*	
PERSIST III*		

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2012 Alfalfa Trials to Test Insect Resistant Cultivars; Trials in Ithaca NY

Trials harvested 3 times per production year; 2009 trial on Langford channery silt loam, 2010, 2011, 2012 trials on Williamson silt loam.

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

PLH populations were at severe levels in 2012.

Sown 2009; 2012 No Insecticide

Cultivar	2012		3-Yr		4-Yr
	Total Season	% of Cks.	Total Season	% of Cks.	Avg. PLH Damage
<i>PLH Resistant</i>	T/A		T/A		
53H92	2.49	102	12.29	105	1.6
POUNCE	2.33	95	11.49	98	3.4
FSG 420 LH	2.25	92	11.16	95	1.2
6475H	2.17	89	11.13	95	1.0
<i>Conventional</i>					
5312	2.35	96	12.02	103	3.7
VERNAL	2.46	101	11.71	100	3.7
ONEIDA VR	2.50	102	11.47	98	4.5
		Ck. Mean		Ck. Mean	
Trial Mean (T/A)	2.40	2.44	11.89	11.73	
5% LSD	0.24		0.72		
CV(%)	8.6		5.2		

Sown 2011; 2012 No Insecticide

Cultivar	2012		2-Yr	Sown 2012 7/26/2012 Yield / PLH Damage
	Total Season	% of Cks.	Avg. PLH Damage	
<i>PLH Resistant</i>	T/A			T/A / score
55H94	4.72	126	2.1	0.41 / 1.7
505005*				0.37 / 1.7
<i>Conventional</i>				
5312	3.86	103	4.9	0.07 / 4.9
VERNAL	3.80	101	4.8	0.08 / 5.0
ONEIDA VR	3.63	96	4.9	0.14 / 5.0
		Ck. Mean		Trial and Score Mean
Trial Mean (T/A)	4.38	3.76		0.21 / 3.4
5% LSD	0.40			0.12 / 0.5
CV(%)	7.1			45.6 / 12.2

Sown 2010; 2012 No Insecticide

Cultivar	Total Season	% of Checks	2-Yr		3-Yr
			Total Season	% of Cks.	Avg. PLH Damage
<i>PLH Resistant</i>	T/A		T/A		
53H92	5.59	103	12.66	103	1.6
WL 353LH	5.41	100	12.05	98	1.6
6475H	5.45	101	11.98	97	1.7
<i>Conventional</i>					
5312	5.55	103	12.59	102	4.0
VERNAL	5.36	99	12.29	100	4.1
ONEIDA VR	5.33	99	11.97	97	4.3
		Ck. Mean			
Trial Mean (T/A)	5.52	5.41	12.33		
5% LSD	0.34		0.62		
CV(%)	5.3		4.3		
2012 Harvests Dates were:			June 15, July 16, Sept. 13.		

Sown 2010; 2012 Sprayed Insecticide

Cultivar	Total Season	% of Checks	2-Yr	
			Total Season	Total Season
<i>PLH Resistant</i>	T/A		T/A	
WL 353LH	5.75	103		11.80
53H92	5.64	101		11.80
<i>Conventional</i>				
5312	5.67	102		11.99
VERNAL	5.66	101		11.69
ONEIDA VR	5.41	97		11.27
		Ck. Mean		
Trial Mean (T/A)	5.82	5.58		12.23
5% LSD	0.33			0.55
CV(%)	4.6			3.6
2012 Harvests Dates were:			June 11, July 16, August 30	

Oneida VR, 5312, and Vernal are alfalfa cultivars susceptible to potato leafhopper. These cultivars are the check cultivars in each trial.

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	Disease Resistance Ratings*							Marketing Co.	
		FD	BW	VW	FW	AN	PRR	Phone Number	Web or E-mail Address	
AMERISTAND 403T PLUS	America's Alfalfa	4	HR	HR	HR	HR	HR	1-800-873-2532	http://www.americasaalfalfa.com/	
AMERISTAND 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR			
ARCHER III	America's Alfalfa	5	HR	HR	HR	HR	HR			
RADIANCE HD	AMPAC Seed Company	4	HR	R	HR	HR	HR	1-800-547-3230	www.ampacseed.com	
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/	
4010BR	BrettYoung	4	HR	HR	HR	HR	HR	1-800-665-5015	www.brettyoung.ca/	
SHOCKWAVE-BR	BrettYoung	4	HR	HR	HR	HR	HR			
STOCKPILE	BrettYoung	4	HR	HR	HR	HR	HR			
KF401B	Byron Seed	4	HR	HR	HR	HR	HR	1-765-569-3555		
CORNERSTONE	Chemgro Seeds	4	HR	HR	HR	HR	HR	1-800-346-4769	www.chemgro.com	
GEMSTONE	Chemgro Seeds	4	HR	HR	HR	HR	HR			
GUNNER	CROPLAN GENETICS	5	HR	HR	HR	HR	HR	1-651-765-5710	www.croplangenetics.com	
LEGENDARY 5.0	CROPLAN GENETICS	3	HR	HR	HR	HR	HR			
REBOUND 5.0	CROPLAN GENETICS	4	HR	HR	HR	HR	HR			
REBOUND 6.0	CROPLAN GENETICS	4	HR	HR	HR	HR	HR			
HYBRIFORCE-2400	Dairyland Seed Co.	4	HR	HR	HR	HR	HR	1-800-236-0163	http://www.dairylandseed.com	
HYBRIFORCE-2420/WET	Dairyland Seed Co.	4	HR	HR	HR	HR	HR			
MAGNUM 7-WET	Dairyland Seed Co.	4	HR	HR	HR	HR	HR			
MAGNUM 7	Dairyland Seed Co.	4	HR	HR	HR	HR	HR			
POUNCE	Doebler's	3	HR	HR	HR	HR	HR	1-800-853-2676	www.doebler.com	
PERSIST II	Doebler's	4	HR	HR	HR	HR	HR			
PERSIST III	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			
MARINER IV	GROWMARK FS	4	HR	HR	HR	HR	HR	1-800-338-4769	www.fsseed.com	
PROFUSION-HX	King's AgriSeeds	4	HR	HR	HR	HR	HR	1-717-687-6224	http://www.kingsagriseeds.com/	
L 333HD	Legacy Seeds	3	HR	HR	HR	HR	HR	1-866-791-6390	www.legacyseeds.com	
LEGACY 449-APH2	Legacy Seeds	4	HR	HR	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	
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	
6305Q	NEXGROW	3	HR	HR	HR	HR	HR	1-855-463-9476	www.plantnexusgrow.com	
6422Q	NEXGROW	4	HR	HR	HR	HR	HR			
6475H	NEXGROW	4	HR	HR	HR	HR	HR			
CRAVE	T.A. Seeds	4	HR	HR	HR	HR	HR	1-866-813-7333	www.taseeds.com	
SENECA	T.A. Seeds	4	HR	HR	HR	HR	HR			
RENEW	T.A. Seeds	4	HR	HR	HR	HR	HR			
NSF-7011ML	Twin Cities Seed Company	4	HR	HR	HR	HR	HR	1-800-545-8873	www.twincityseed.com	
53H92	Pioneer Hi-Bred	3	HR	HR	HR	HR	HR	1-800-247-6803	www.pioneer.com	
55H94	Pioneer Hi-Bred	5	HR	HR	HR	HR	HR			
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			
55V50	Pioneer Hi-Bred	5	HR	HR	R	HR	HR			
375HY/BR	Preferred Seed Co.	4	HR	HR	HR	HR	R	1-716-895-7333	www.preferredseed.com	
4030	Preferred Seed Co.	4	HR	HR	HR	HR	HR			
PGI 215	Producer's Choice	2	HR	HR	HR	HR	HR	1-877-560-5181	www.producerschoiceseed.com	
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			
FSG 329	Seedway/FSG	3	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			
MAGNITUDE	Seedway/FSG	4	HR	HR	HR	HR	HR			
BRADOR	Semican International	4	HR	HR	HR	HR	HR	1-866-736-4226	www.semican.ca	
MASKA	Semican International	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 354HQ	W-L Research	4	HR	HR	HR	HR	HR			
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-Anthraxnose, Prr-Phytophthora root rot

Red Clover and Birdsfoot Trefoil Cultivar Yield Trials- 2012 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 Arlington in 2009 and are Marathon and Cinnamon Plus in 2010,2011, 2012

Sown May 12, 2009		2012			2011	2010	3-Yr.	
Cultivar/Experimental	Marketing Company	16-Jun	% of Checks	Stand 15-Oct	Total Season	Total Season	Total	% of Cks.
StarFire II	AMPAC	T/A	1.33	130	17	T/A	T/A	T/A
LS 9703	Lewis Seed	1.08	105	13	3.08	6.12	10.46	113
C328	WI experimental	1.45	141	16	2.39	6.17	10.35	112
Marathon	check	1.04	102	9	2.13	6.18	10.21	110
Arlington	WI check	1.01	98	5	2.24	6.25	9.45	102
			Ck. Mean					Ck. Mean
5% LSD		0.30	1.03	8	0.39	0.41	0.99	9.24

Sown May 11, 2010		2012			2011	2-Yr.	
Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 15-Oct	Total Season	Total	% of Cks
CW 30091	Cal/West Seeds	T/A	2.32	146	40	T/A	T/A
Cinnamon Plus	check / Allied Seed, L.L.C.	2.07	130	38	4.79	7.10	120
Freedom!MR	Barenbrug	1.91	120	37	4.32	6.39	108
Marathon	check	1.71	108	40	4.19	6.09	103
Arlington	check	1.46	92	20	4.31	6.02	102
			Ck. Mean		4.32	5.78	98
5% LSD		0.21	1.59	8	0.25	0.31	5.9

Sown May 13, 2011		2012		
Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand 1-Oct
Cinnamon Plus	check / Allied Seed, L.L.C.	5.64	101	94
Marathon	check	5.47	98	94
RC0005	Allied Seed, L.L.C.	5.29	95	95
			Ck. Mean	
5% LSD		0.35	5.56	2

Sown on May 16, 2012			
Cultivar	Marketing Company		
B.11.1816	Blue Moon Farms		
Cinnamon Plus	check / Allied Seed, L.L.C.	<Seeding year yields are	
FSG 402	Seedway/Allied Seed, L.L.C.	not available due to drought. >	
IS-TP12	DLF International Seeds		
Marathon	check		
RC 9806	FFR/PICKSEED		

BIRDSFOOT TREFOIL

Sown May 12, 2009		2012			2011	2010	3-Yr	3-Yr % of
Cultivar	Marketing Company	20-Jun	% of Norcen	% Stand 15-Oct	Total Season	Total Season	Total	Norcen
Bruce	Semican	T/A	1.66	121	30	T/A	T/A	T/A
Pardee	Seedway/FSG/GROWMARK FS	1.50	109	28	4.25	4.55	10.46	127
AC Langile	Public Check	1.49	109	28	4.37	4.55	10.41	126
WITT	Public Check	1.45	106	23	4.17	3.81	9.47	115
Norcen	Public Check	1.37	100	35	3.84	3.91	9.20	111
5% LSD		0.19		8	3.72	3.17	8.26	100

Sown on May 11, 2011		2012		
Cultivar	Marketing Company	Total Season	% of Norcen	% Stand 3-Oct
Pardee	Seedway/FSG/GROWMARK FS	3.55	256	44
Bruce	Semican	3.28	236	46
Norcen	Public Check	1.39	100	40
5% LSD		0.46		13

Marketing Company*	Phone	Web address
AgriCulver	1-800-836-3701	
Allied Seed, L.L.C.	1-208-250-6321	www.alliedseed.com
AMPAC Seed	1-541-928-1651	www.ampacseed.com
Blue Moon Farms	1-541-936-1210	
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	
Growmark FS	1-800-338-4769	www.fsseed.com
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

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012**Table 4: 2012 Perennial Forage Grass Yield Summary**

Ithaca, Tompkins Co., Sown 2009, 2010, 2011, 2012

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: 2009, 2011 plantings Williamson silt loam, 2010 Erie-Ellery channery silt loam, 2012 Niagara silt loam.

Marketer		2012			2011			2010			3 or 2-Yr. Total	
		Total Season	Oct. % Stand	Heading Date	Total Season	Nov. % Stand	Heading Date	Total Season	Nov. % Stand	Heading Date		
		T/A			T/A			T/A				
Timothy		Sown August 7, 2009										
Richmond	check	4.17	73	20-May	5.19	75	27-May	7.01	80	24-May	16.37	
Climax	check	3.78	66	28-May	4.82	79	2-Jun	5.93	80	1-Jun	14.53	
Tuukka	AMPAC	3.59	64	7-Jun	4.66	74	7-Jun	5.98	83	3-Jun	14.23	
	LSD(.05)	0.22	3		0.36	6		0.47	5			
Timothy		2 Harvests in 2012										
Timothy		Sown May 11, 2010										
Richmond	check	4.39	55	22-May	6.37	81	27-May				10.76	
Climax	check	3.64	60	30-May	5.53	74	2-Jun				9.17	
Dainiai	Allied Seed, L.L.C.	3.17	45	5-Jun	4.53	65	7-Jun				7.70	
	LSD(.05)	0.17	13		0.29	5						
Timothy		Sown May 11, 2011										
Richmond	check	6.23	87	22-May								
Summit	Seedway	6.21	85	19-May								
Crest	Seedway	5.51	83	22-May								
Climax	check	5.00	82	30-May								
	LSD(.05)	0.61	9									
Orchardgrass		Sown August 7, 2009										
IS-OG 52	DLF International Seeds	3.66	64	15-May	6.17	69	17-May	9.09	76	10-May	1.6	15.26
Potomac	check	3.15	68	11-May	5.79	73	13-May	8.78	80	4-May	2.1	14.57
Profit-coated	AMPAC	3.12	65	11-May	5.80	71	17-May	8.55	74	10-May	1.6	14.35
Excellate SA	Lewis Seed	2.97	58	20-May	5.55	59	20-May	7.56	76	19-May	1.0	13.12
Profit	AMPAC	3.08	63	11-May	5.46	70	17-May	7.62	76	10-May	1.4	13.08
Tekapo-coated	AMPAC	2.99	71	11-May	5.01	73	17-May	7.94	81	6-May	1.0	12.95
Tekapo	AMPAC	2.67	65	11-May	4.72	68	17-May	7.12	80	6-May	1.3	11.85
Dividend VL	Allied Seed, L.L.C.	2.27	63	26-May	5.31	79	24-May	6.50	81	21-May	2.8	11.81
AMP-1MB	AMPAC	2.77	50	9-May	4.06	50	17-May	6.17	74	6-May	2.6	10.24
	LSD(.05)	0.29	6		0.52	5		0.75	5	0.5		
Orchardgrass		2 Harvests in 2012										
Orchardgrass		Sown May 11, 2010										
Potomac	check	5.32	45	10-May	7.28	80	17-May				12.60	
Persist	Smith Seeds	5.46	48	10-May	6.76	79	17-May				12.22	
IS-OG 53	DLF International Seeds	5.49	33	20-May	6.70	70	20-May				12.19	
Dg83R01	Barenbrug	5.05	40	26-May	6.80	80	27-May				11.85	
Dg12R01	Barenbrug	5.06	38	16-May	6.66	80	20-May				11.72	
Anksta	Allied Seed, L.L.C.	5.06	48	10-May	6.62	81	13-May				11.68	
	LSD(.05)	0.23	9		0.39	8						
Orchardgrass		Sown May 11, 2011										
IS-OG 53	DLF International Seeds	7.20	83	10-May								
Extend	Seedway	7.07	88	9-May								
Potomac	check	6.90	88	9-May								
Olympia	Pennington Seed	6.86	88	20-May								
	LSD(.05)	0.32	5									
Tall Fescue		Sown May 6, 2009										
Goliath-coated	AMPAC	4.34	73	14-May	7.02	79	20-May	7.23	79	17-May	18.89	
IS-FTF 48	DLF International Seeds	4.51	68	17-May	7.32	73	24-May	7.00	71	21-May	18.84	
KY 31 E-	check	4.58	74	15-May	7.04	75	22-May	7.19	78	19-May	18.82	
Goliath	AMPAC	4.17	73	14-May	7.32	76	22-May	7.32	79	17-May	18.51	
Bronson	AMPAC	4.21	73	14-May	6.86	76	20-May	6.89	79	17-May	17.96	
KY 31 E+	check	4.02	74	17-May	6.78	74	24-May	6.99	75	21-May	17.79	
Pradel (Meadow Fes.)	check	2.90	50	20-May	5.27	65	22-May	5.63	73	19-May	13.80	
AMP-1MF (Meadow Fes.)	AMPAC	2.83	58	17-May	5.02	68	20-May	5.39	73	19-May	13.24	
	LSD(.05)	0.57	6		0.53	4		0.64	4			
Tall Fescue		2 Harvests in 2012										
Tall Fescue		Sown May 11, 2010										
KY 31 E-	check	5.56	61	19-May	7.66	81	24-May				13.22	
KY 31 E+	check	5.67	56	19-May	7.52	78	20-May				13.19	
Cajun II	Smith Seeds	5.53	64	13-May	7.28	81	24-May				12.81	
BarElite	Barenbrug	5.01	53	20-May	7.13	75	24-May				12.14	
	LSD(.05)	0.30	9		0.27	5						
Tall Fescue		Sown May 11, 2011										
KY 31 E-	check	7.46	88	14-May								
KY 31 E+	check	7.05	88	13-May								
Enhance	Seedway	6.77	88	14-May								
Tower 647	DLF International Seeds	6.58	80	22-May								
	LSD(.05)	0.69	6									

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012

Table 4 (cont): 2011 Perennial Forage Grass Yield Summary

Ithaca, Tompkins Co., Sown 2009, 2010, 2011, 2012

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

Soils: 2009, 2011 plantings Williamson silt loam, 2010 Erie-Ellery channery silt loam, 2012 Niagara silt loam.

Marketer	2012			2011			2010			3 or 2-Yr. Total	
	Total Season	Oct. % Stand	Heading Date	Total Season	Oct. % Stand	Heading Date	Total Season	Oct. % Stand	Heading Date		
Bromegrass											
Sown May 11, 2010											
Peak	Seedway/FSG/Growmark FS	4.84	63	13-May	6.67	84	20-May			11.51	
BAR Bif1GRL	Barenbrug	4.77	65	16-May	6.62	84	20-May			11.38	
BAR BcF1FRRL	Barenbrug	4.65	60	9-May	6.14	81	13-May			10.79	
Hakari	Barenbrug	3.93	48	23-May	6.76	81	2-Jun			10.69	
AC Knowles	Barenbrug	3.28	53	10-May	5.61	74	17-May			8.88	
	LSD(.05)	0.52	12		0.55	8					
3 harvests in 2012											
Bromegrass											
Sown May 11, 2011											
Barpal 16	Barenbrug	6.50	70	9-May							
Hakari	Barenbrug	6.17	63	22-May							
Peak	Seedway/FSG	4.59	70	14-May							
	LSD(.05)	0.66	8								
Perennial Ryegrass											
Sown May 6, 2009											
AMP-EDR1 (festulolium)	AMPAC	4.38	56	17-May	5.42	59	24-May	7.13	69	19-May	16.93
Spring Green (festulolium)	check	4.42	59	20-May	5.08	66	27-May	6.77	74	17-May	16.26
AMP-MDR2	AMPAC	4.06	58	22-May	5.24	69	27-May	6.78	70	21-May	16.08
Duo (festulolium)	AMPAC	3.72	55	22-May	5.04	66	24-May	5.99	69	19-May	14.75
Power	AMPAC	3.67	60	22-May	4.52	61	27-May	6.29	73	21-May	14.48
Calibra	check	3.59	58	23-May	4.48	68	27-May	5.99	73	24-May	14.06
Tonga	AMPAC	3.27	55	17-May	4.48	60	22-May	5.95	73	17-May	13.70
Impresario	DLF International Seeds	3.15	65	20-May	4.44	63	24-May	5.82	73	19-May	13.42
Linn	check	2.78	63	14-May	4.22	70	19-May	5.68	81	17-May	12.68
Orantas	DLF International Seeds	3.22	55	23-May	4.04	71	27-May	5.11	78	23-May	12.37
	LSD(.05)	0.46	9		0.36	6		0.43	5		
2 Harvests in 2012											
Tetraploid perennial ryegrass Power, Impresario, Tonga, AMP MDR2, Calibra; Diploid perennial ryegrass -Orantas, Linn											
Perennial Ryegrass											
Sown May 11, 2010											
Kentaur	DLF International Seeds	4.36	38	24-May	6.04	70	31-May			10.40	
Elena DS	Allied Seed, L.L.C.	4.31	40	24-May	6.00	65	27-May			10.31	
Calibra	check	4.03	45	24-May	5.60	71	27-May			9.64	
Verseka	Allied Seed, L.L.C.	3.64	38	24-May	5.73	68	27-May			9.37	
Polim	DLF International Seeds	4.26	33	5-Jun	5.01	68	2-Jun			9.27	
Linn	check	3.52	55	13-May	4.80	80	20-May			8.32	
	LSD(.05)	0.32	8		0.33	6					
Tetraploid perennial ryegrass Kentaur, Elena DS, Verseka, Polim, Calibra; Diploid perennial ryegrass -Linn											
Perennial Ryegrass											
Sown May 11, 2011											
PPG-LHT103	Mountain View Seed	6.09	85	22-May							
Spring Green (festulolium)	check	5.46	85	14-May							
Boost	Seedway / FSG	5.31	88	19-May							
Gain	Seedway / FSG	5.11	79	14-May							
PPG-FPRT103	Mountain View Seed	4.63	85	20-May							
Linn	check	4.51	89	13-May							
Tivoli	DLF International Seeds	4.32	81	1-Jun							
	LSD(.05)	0.33	5								
Tetraploid perennial ryegrass Tivoli, PPG-LHT103, Boost, PPG-FPRT103; Diploid perennial ryegrass -Linn; festulolium -Spring Green, Gain											

Marketing Co.**Marketing Company****Phone Number****Web or E-mail Address**

AgriCulver 1-800-836-3701
 Allied Seed, L.L.C. 1-208-250-6321
 AMPAC Seed Company 1-800-547-3230
 Barenbrug USA 1-800-547-4101
 Burlingham Seeds 1-503-623-2306
 DLF International Seeds 1-541-369-2251
 Grassland Oregon 1-503-566-9900
 Growmark FS 1-800-338-4769
 Land O' Lakes 1-800-328-9680
 Lewis Seed Co. 1-541-491-3700
 Mountain View Seeds 1-503-588-7333
 Pennington Seed 1-800-285-SEED
 PICKSEED 1-705-878-9240
 ProSeeds Marketing 1-541-928-9999
 Seed Research of Oregon 1-800-253-5766
 Seedway/FSG 1-800-836-3710
 Semican 1-866-736-4226
 Smith Seeds

www.alliedseed.com
www.ampacseed.com
www.barusa.com
www.burlinghamseeds.com
www.dflis.com
www.fsseed.com
www.landolakesinc.com
www.lewisseed.com/
www.mtviewseeds.com
www.penningtonseed.com
<http://www.pickseed.com/ECanada/index.html>
www.proseeds.net
www.sroseed.com
www.seedway.com
www.semican.ca
www.smithseed.com/contact.shtml

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2012

Perennial Forage Grass Varieties - 2011 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.

Table 5: Spring Forage Quality Data for Grass Varieties

	Trial Sown 2009 Boot Stage in 2011			Trial Sown 2010 Boot Stage in 2011			
	Date at Boot Stage	% NDF	% NDFD	Date at Boot Stage	% NDF	% NDFD	
Perennial Ryegrass				Perennial Ryegrass			
Linn	19-May	50	85	Linn	20-May	56	84
Tonga	22-May	43	86	Calibra	27-May	51	84
Duo	24-May	51	85	Elena DS	27-May	56	81
AMP-EDR1	24-May	49	83	Verseka	27-May	53	83
Impressario	24-May	47	85	Kentaur	31-May	56	78
AMP-MDR2	27-May	51	84	Polim	2-Jun	53	81
Spring Green	27-May	52	82				
Calibra	27-May	48	86				
Orantas	27-May	48	86				
Power	27-May	47	86				
Tall and Meadow Fescue				Tall Fescue			
Bronson	20-May	56	77	KY 31 E+	20-May	59	76
AMP-1MF (Meadow Fes.)	20-May	50	85	KY 31 E-	24-May	58	76
Goliath	20-May	56	76	BarElite	24-May	58	75
Goliath-coated	22-May	55	73	Cajun II	24-May	59	76
KY 31 E-	22-May	54	77				
Pradel (Meadow Fes.)	22-May	52	83				
IS-FTF 48	24-May	56	74				
KY 31 E+	24-May	56	75				
Orchardgrass				Orchardgrass			
Potomac	13-May	48	84	Anksta	13-May	51	84
Profit	17-May	57	85	Potomac	17-May	59	81
AMP-1MB	17-May	56	89	Persist	17-May	54	83
IS-OG 52	17-May	56	84	IS-OG 53	20-May	59	82
Tekapo-coated	17-May	59	85	Dg12R01	20-May	61	80
Profit-coated	17-May	59	83	Dg83R01	27-May	65	74
Tekapo	17-May	57	87				
Excellate SA	20-May	58	82				
Dividend VL	24-May	61	79				
Timothy				Timothy			
Richmond	27-May	64	73	Richmond	27-May	60	75
Climax	2-Jun	66	71	Climax	2-Jun	63	74
Tuukka	7-Jun	63	72	Dainiai	7-Jun	62	72
Trial Sown 2010				Bromegrass			
Annual Ryegrass				Bromegrass			
Thunder	17-May	55	87	BAR BcF1FRRL	13-May		
AE 110	20-May	47	87	AC Knowles	17-May	54	89
Ed (2n)	20-May	47	87	BAR BiF1GRL	20-May	62	83
Big Boss (4n)	24-May	46	84	Peak	20-May	61	84
PS-Lm-09-2	24-May	53	76	Hakari	2-Jun	70	75
PS07-2 AR	24-May	54	77				
Feast II	27-May	49	83				
Max	27-May	55	77				

Perennial Forage Grass Varieties - 2011 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: 2011 Spring, First Harvest Forage Quality Data for Grass Varieties

	Trial Sown 2009					Trial Sown 2010					
	First Harvest in 2011 - May 31			% Seed Heads at Harvest 2	2011 Aftermath Forage Yield (t/a)	First Harvest in 2011 - June 3			% Seed Heads at Harvest 2	2011 Aftermath Forage Yield (t/a)	
	Yield (t/a) Harvest 1	% NDF	% NDFD			Yield (t/a) Harvest 1	% NDF	% NDFD			
Perennial Ryegrass											
Linn	2.30	63	69	2	1.92	Linn	2.97	63	69	13	1.82
Tonga	1.99	58	72	5	2.49	Calibra	2.87	58	75	1	2.73
Duo	2.47	60	75	20	2.56	Elena DS	3.24	61	73	18	2.77
AMP-EDR1	2.52	59	74	33	2.90	Verseka	3.24	58	74	2	2.49
Impressario	1.87	54	78	5	2.57	Kentaur	3.24	58	75	2	2.80
AMP-MDR2	2.50	57	77	11	2.74	Polim	2.16	51	80	1	2.85
Spring Green	2.45	59	77	20	2.63						
Calibra	1.90	52	80	5	2.58						
Orantas	1.59	55	81	7	2.45						
Power	1.78	54	81	9	2.74						
Tall and Meadow Fescue						Tall Fescue					
Bronson	2.66	64	67	1	4.20	KY 31 E+	3.57	63	65	1	3.96
AMP-1MF (Meadow Fes.)	2.66	62	72	1	2.36	KY 31 E-	3.59	62	67	1	4.06
Goliath	2.51	63	67	1	4.51	BarElite	3.33	62	69	1	3.80
Goliath-coated	2.71	64	68	1	4.61	Cajun II	3.45	62	67	1	3.83
KY 31 E-	2.68	63	69	1	4.36						
Pradel (Meadow Fes.)	2.58	64	73	1	2.69						
IS-FTF 48	2.77	62	70	1	4.55						
KY 31 E+	2.49	61	70	1	4.29						
Orchardgrass	Har. 1 on May 27					Orchardgrass					
Potomac	2.19	64	74	1	3.61	Anksta	3.53	73	62	1	3.37
Profit	2.07	65	73	1	3.38	Potomac	2.98	73	62	1	3.59
AMP-1MB	2.09	63	77	1	1.98	Persist	3.08	74	61	1	3.51
IS-OG 52	2.41	64	74	1	3.76	IS-OG 53	3.18	68	70	1	3.58
Tekapo-coated	1.69	63	73	1	3.32	Dg12R01	3.12	70	66	1	3.98
Profit-coated	2.26	64	73	1	3.55	Dg83R01	3.12	70	68	1	3.78
Tekapo	1.62	63	75	1	3.11						
Excellate SA	2.04	65	74	1	3.52						
Dividend VL	2.44	61	77	1	2.87						
Timothy	Har. 1 on May 27					Timothy					
Richmond	2.65	60	76	1	2.54	Richmond	3.53	64	67	68	2.85
Climax	2.42	58	78	1	2.40	Climax	3.13	60	75	28	2.40
Tuukka	2.25	55	81	1	2.41	Dainiai	2.74	57	77	5	1.79
Annual Ryegrass						Bromegrass					
Thunder	2.16	64	62	90	1.93	BAR BcF1FRRL	3.53	71	66	1	2.62
AE 110	2.59	60	67	85	2.56	AC Knowles	3.54	67	71	1	2.06
Ed (2n)	2.46	61	66	90	1.64	BAR BiF1GRL	3.94	71	67	1	2.68
Big Boss (4n)	1.97	58	68	90	1.48	Peak	3.80	70	66	1	2.88
PS-Lm-09-2	3.06	62	63	75	2.94	Hakari	3.70	68	75	50	3.06
PS07-2 AR	3.36	61	65	70	3.10						
Feast II	2.34	58	72	78	2.97						
Max	3.06	60	67	85	3.53						

Table 7: Annual Ryegrass Trials, and Perennial Cool Season Grass Trials Sown in 2012.

Variety	Marketing Company	2012			2011		2 or 3-Yr. Total	Variety	Marketing Company
		Total Season	% Stand	Heading Date	Total Season	% Stand 22-Nov			
Annual Ryegrass							Orchardgrass		
Sown May 11, 2011							T/A		
PPG-LWD101	Mountain View Seed	4.82	15	14-May	2.26	85	7.08	Checkmate	PICKSEED
PPG-LWT104	Mountain View Seed	4.00	40	14-May	2.57	78	6.57	Orca	PICKSEED
Maximo	PICKSEED USA, Inc	5.84	75	19-May	1.80	85	7.64	Niva	DLF
PS-AR-09-1	PICKSEED USA, Inc	6.17	71	14-May	2.06	88	8.23	PPG-0G101	Mountain View Seed
PS-Lm-09-2	PICKSEED USA, Inc	6.27	70	14-May	2.07	83	8.34	PPG-0G102	Mountain View Seed
AE 110	Check	5.22	48	14-May	1.87	76	7.09	PPG-0G103	Mountain View Seed
MX 108	Check	5.91	75	16-May	1.95	80	7.86	Potomac	check
Feast II	Check	5.31	66	16-May	2.34	83	7.65	Tall Fescue	
	LSD(.05)	0.38	9		0.46	6		Tuscany II	PICKSEED
2012							T/A		
Variety	Marketing Company	Nov. 12	% Stand						
Annual Ryegrass							Perennial Ryegrass		
Sown May 18, 2012							T/A		
AE 110	PICKSEED	0.58		Calibra	check			Linn	check
Lh-4x-1PS	PICKSEED	0.72		Zenital	BrettYoung			Torgal	BrettYoung
Mx108	PICKSEED	0.52		Hostyn	DLF			Perun	DLF
PS-Lm-09-2	PICKSEED	0.55		Spring Green	check			Clair	check
Fria	Seedway/Allied	0.95		TM0801	FFR			TM0802	FFR
IS-LMT 5	DLF	0.66		Kara	Semican			Ovation	Semican
IS-LMT 6	DLF	0.60		SummerGraze	BrettYoung			Climax	check
IS-LMT 15	DLF	0.66		Crest	Seedway			Summit	Seedway
Zorro	DLF	0.65							
Feast II	check	0.78							
	LSD(.05)	0.14							

2012 Weather Data for Ithaca New York and for New York State

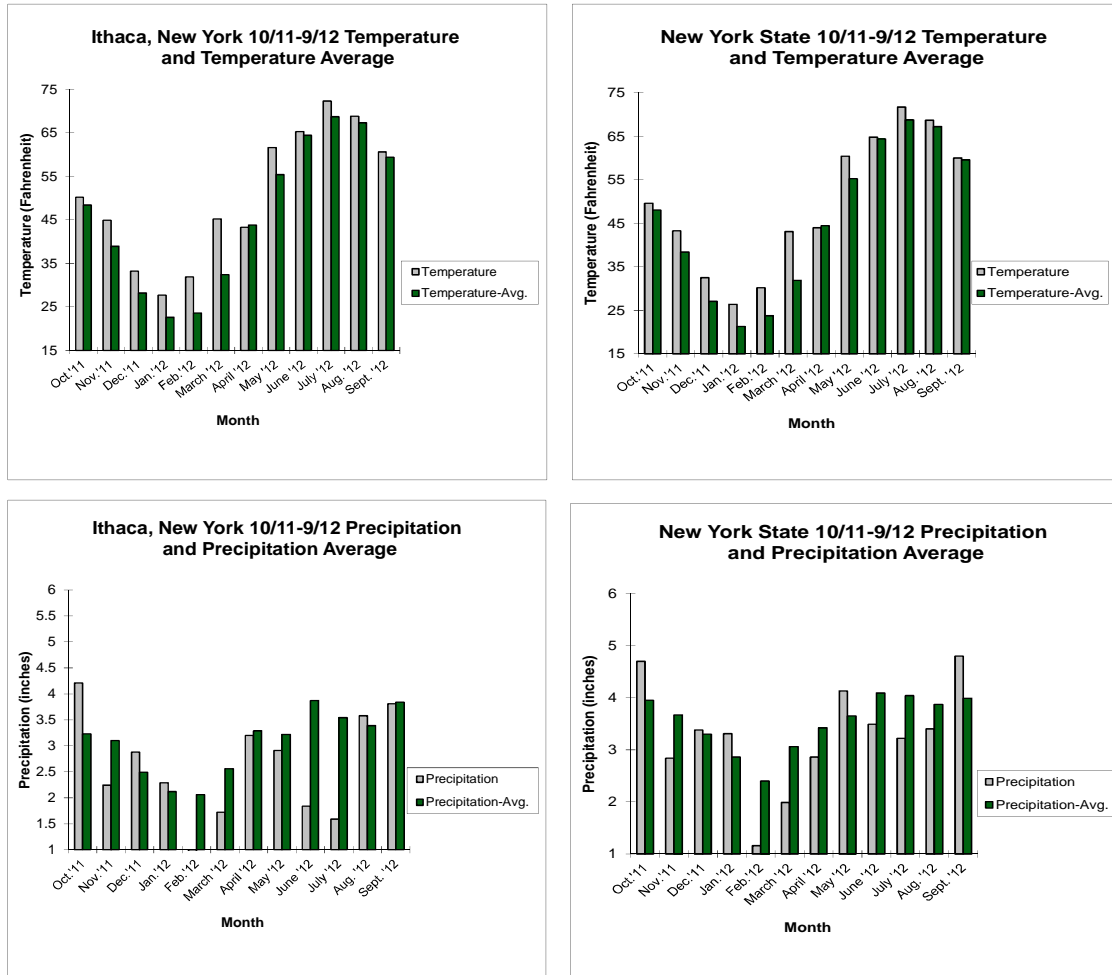


Figure 1: Ithaca, New York 10/11-9/12 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell U. www.nrcc.cornell.edu/page_summaries.html

Table 8: Index of Forage Varieties in 2012 Summary Report and Page Number where information is located.

Alfalfa	Pg. No.	Alfalfa	Pg. No.	Timothy	Pg. No.
5312	3,4,5,6	N-R-GEE	3,4,5,6	Clair	12
375HY/BR	4,6	NSF-7011ML	3,6	Climax	8,10,11,12
4010BR	4,6	ONEIDA VR	3,4,5,6	Crest	8,12
4030	4,6	PERSIST II	3,4,5,6	Dainiai	8,10,11
4A415	3,4,6	PERSIST III	4,5,6	Kara	12
4S417	3,4,6	PGI 215	3,4,5,6	Ovation	12
505004*	5	PGI 557	3,4,5,6	Richmond	8,10,11
505005*	5	PHIRST EXTRA	3,4,5,6	SummerGraze	12
53H92	4,5,6	PILLAR	3,4,6	Summit	8,12
54Q32	3,6	PLUSS II	3,4,6	TM0801	12
55H94	5,6	POUNCE	3,5,6	TM0802	12
55V12	3,6	PROFUSION-HX	4,6	Tuukka	10,11
55V48	3,4,6	PROLIFIC II	3,4,5,6	Tall Fescue	Pg. No.
55V50	3,4,5,6	RADIANCE HD	3,6	AMP-1MF (Meadow Fes.)	8,10,11
6305Q	3,4,6	REBOUND 5.0	3,6	BarElite	8,10,11
6422Q	3,6	REBOUND 6.0	4,5,6	BARFaFL 118701	12
6475H	5,6	RED FALCON BR	4,6	BARFaFL 118702	12
AMERISTAND 403T PLUS	3,6	REGEN	3,4,5,6	Bronson	8,10,11
AMERISTAND 407TQ	3,4,6	RENEW*	3	Cajun II	8,10,11
ARCHER III	4,5,6	RUGGED	4,6	Enhance	8
BARALFA X42	4,6	SEEDWAY 9558 SBR*	4,5	Flourish	12
BRADORA	5,6	SENECA	4,5,6	Goliath	8,10,11
CORNERSTONE	4,6	SHOCKWAVE-BR	4,6	Goliath-coated	8,10,11
CRAVE	4,5,6	SONIC	3,6	IS-FTF 48	8,10,11
CW 053015*	4	STOCKPILE	4,6	Kora	12
CW 0550055*	4,5	TJA 901*	3	KY 31 E-	8,10,11,12
CW 085028*	5	TJA 902*	3	KY 31 E+	8,10,11,12
DG 3210	3,4,6	TJA 903*	3	PPG-FTF101	12
DG 4210	3,4,5, 6	TJA 904*	3	Pradel (Meadow Fes.)	8,10,11
DKA43-13	3,4,6	VERNAL	3,4,5,6	PST-5CAN	12
DS704-M*	4	WL 343HQ	3,4,6	Tower	12
DSA09-L*	4	WL 353LH	4,5,6	Tower 647	8
DSB01-T*	4	WL 354HQ	4,5,6	Tuscany II	12
DSB02-T*	4	WL 363HQ	3,4,6	Bromegrass	
DSB03-T*	4	Red Clover	Pg. No.	AC Knowles	9,10,11
DSB04-BR*	4	Arlington	7	BAR BcF1FRRL	9,10,11
DSB05-BR*	4	B.11.1816	7	BAR BiF1GRL	9,10,11
DSB07-L*	4	C328	7	Barpal 16	9
DSB09-M*	4	Cinnamon Plus	7	Hakari	9,10,11
DSC01-T*	5	CW 30091	7	Peak	9,10,11
DSC02-T*	5	Freedom!MR	7	Perennial Ryegrass	
DSC03-BR*	5	FSG 402	7	AMP-EDR1 (festulolium)	9,10,11
DSC04-BR*	5	IS-TP12	7	AMP-MDR2	9,10,11
DSC05-BR*	5	LS 9703	7	Boost	9
DSC06-M*	5	Marathon	7	Calibra	9,10,11,12
EZRA	3,4,5,6	RC 9806	7	Duo (festulolium)	9,10,11
FG 45A119*	4,5	RC0005	7	Elena DS	9,10,11
FG 48A177*	5	StarFire II	7	Gain	9
FSG 329	3,6	Birdsfoot Trefoil		Hostyn	12
FSG 408 DP	3,6	AC Langile	7	Impressario	9,10,11
FSG 420 LH	3,5,6	Bruce	7	Kentaur	9,10,11
GEMSTONE	5,6	Norcen	7	Linn	9,10,11,12
GUARDSMAN II	3,4,6	Pardee	7	Orantas	9,10,11
GUNNER	3,4,5,6	WITT	7	Perun	12
HYBRIFORCE-2400	3,4,6	Orchardgrass		Polim	9,10,11
HYBRIFORCE-2420*	4	AMP-1MB	8,10,11	Power	9,10,11
HYBRIFORCE-2420/WET	3,6	Anksta	8,10,11	PPG-FPRT103	9
KF401B	3,6	Checkmate	12	PPG-LHT103	9
L 333HD	3,6	Dg12R01	8,10,11	Spring Green (festulolium)	9,10,11,12
LEGACY 449APH2	5,6	Dg83R01	8,10,11	Tivoli	9
LEGENDAIRY 5.0	3,6	Dividend VL	8,10,11	Tonga	9,10,11
MAGNITUDE	5,6	Excellate SA	8,10,11	Torgal	12
MAGNUM 7	3,5,6	Extend	8	Verseka	9,10,11
MAGNUM 7-WET	4,5,6	IS-OG 52	8,10,11	Zenital	12
MARINER IV	5,6	IS-OG 53	8,10,11	Annual Ryegrass	
MASKA	5,6	Niva	12	Feast II	10,11,12
msSunstra-803*	5	Olympia	8	Fria	12
msSunstra-803QR*	5	Orca	12	IS-LMT 15	12
msSunstra-901*	3	Persist	8,10,11	IS-LMT 5	12
msSunstra-903*	3	Potomac	8,10,11,12	IS-LMT 6	12
msSunstra-A10*	4	PPG-0G101	12	Lh-4x-1PS	12
msSunstra-B12*	5	PPG-0G102	12	Max	10,11
msSunstra-C10*	5	PPG-0G103	12	Maximo	12
msSunstra-C11*	5	Profit	8,10,11	MX 108	12
msSunstra-C12*	5	Profit-coated	8,10,11	PPG-LWD101	12
msSunstra-C13*	5	Tekapo	8,10,11	PPG-LWT104	12
msSunstra-C14*	5	Tekapo-coated	8,10,11	PS07-2 AR	10,11
msSunstra-C15*	5	Annual Ryegrass		PS-AR-09-1	12
		AE 110	10,11,12	PS-Lm-09-2	10,11,12
		Big Boss (4n)	10,11	Thunder	10,11
		Ed (2n)	10,11	Zorro	12