

NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS

SUMMARY FOR 2007 – SEASON TOTALS



J. Hansen*, D. Viands, R. Deubler, J. Neally, E. Thomas, J. Yaeger Department of Plant Breeding and Genetics, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY 14853
<http://plbrgen.cals.cornell.edu/programsandprojects/departamental/foragetest/>

Forage yield trials are planted and harvested annually at Cornell University. 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 are managed for four years; seeding year and three production years.

2007 Growing Season (Figures 1 and 2)

For the state, April and July had cooler than average temperatures (-2.5 degrees F and -1.2 degrees F respectively) and had above normal precipitation (144% and 124% of normal respectively). May, June, August, and September were all higher than normal average temperatures and lower than average precipitation (average of four months: 1.4 degrees F and 66% of normal).

Alfalfa yields for 2007 averaged 5.64 tons per acre dry matter (0.9 tons more than in 2006), red clover yields averaged 3.18 tons per acre dry matter (1.28 tons less than in 2006), and perennial forage grass yields averaged 4.58 tons per acre dry matter (0.73 tons per acre less than in 2006).

Cultivar/Variety Selection

Plant breeders continue to develop new and improved cultivars. Cultivars are continually released and were selected for improved agronomic characteristics such

*jlh17@cornell.edu, 607-255-5043 (Ph), 607-255-6344 (Fax)

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 not one best cultivar, but rather 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 with fall dormancy ratings higher than 4 may have unacceptable winter-hardiness for New York, particularly in Northern New York. The trials in Perry and Cobleskill were harvested four times during the growing season. The remaining trials were harvested three times. 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.



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. For the comparison of varieties, trials of red clover will be harvested in the third production year if the plants in the trial do not severely winterkill after the second production year. This year the second and third production year trials had stand decline due to winter injury and drought.

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 200 lb/A ammonium nitrate in early April and after first, second, and third harvests. Forage grass trials are harvested four times between May 20th and

October 10th. Grass yields by species for 2007 are listed in the summary table. 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 management program.

Grass forage quality estimates from 2006 for the trials planted in 2004 are presented in **Table 7**. Grass forage quality estimates from 2006 for trials planted in 2005 are presented in **Table 8**. Forage quality estimates from 2007 for trials planted in 2005 and 2006 will be available on our web site later in the winter.

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.

2007 NYS Base 50 Growing Degree Day

http://www.nrcc.cornell.edu/grass/grassWeb_dd.html

Station		Since March 15	Last Season	Seasonal Departure
New York	Distance from Trials			
ALBANY AP	44 mi. E of Cobleskill	2939	2718	433
BINGHAMTON LINK FLD		2677	2248	434
BRIDGEHAMPTON		3140	2920	468
BUFFALO NIAGARA INTL AP	50 mi. W of Perry	3039	2737	503
CANTON 4 SE		2395	2272	359
COOPERSTOWN	30 mi. E of Cobleskill	2390	2254	501
FRANKLINVILLE	42 mi. SW of Perry	2138	1926	381
ISLIP LI MACARTHUR AP		3323	3127	297
ITHACA CORNELL UNIV	Ithaca	2546	2268	398
NEW YORK LAGUARDIA AP		4321	4083	716
ROCHESTER GTR INTL AP	45 mi. NE of Perry	3008	2817	439
SLIDE MTN	115 mi. S of Chazy	1861	1617	525
SYRACUSE HANCOCK INTL AP		2918	2632	371
TUPPER LAKE SUNMOUNT	85 mi. SW of Chazy	1891	1666	368
WATERTOWN INTL AP		2427	2241	363
WESTCHESTER CO AP		3273	3061	344

*jlh17@cornell.edu, 607-255-5043 (Ph), 607-255-6344 (Fax)

Table 1: New York Alfalfa Cultivar Yield Trial Results - 2007 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 2004 - 2007

Cultivar	Yielded in the Top 50% of the Trial(s)*		Total No. of harvests
	Avg. % of Cks	No. of harvests	
6415	113	24	24
4A421	107	28	28
4G418RR	105	3	7
4S419	109	12	12
54Q25	111	9	9
54V46	110	28	28
Baralfa 32IQ	107	6	12
Baralfa 53HR	110	9	9
Dakota	109	9	9
DKA33-16	115	9	9
DKA34-17RR	104	3	7
DKA42-15	118	21	21
FSG 351	111	9	9
FSG 406	109	9	9
FSG 408DP	113	21	21
FSG 505	110	9	9
Genoa	114	33	33
Guardman II	106	19	40
HybriForce-420/Wet	112	21	30
HYTEST 410	109	9	9
LegenDairy 5.0	113	21	21
Lightning EXTRA	113	28	28
Mariner III	106	7	7
Milestone	105	6	12
Paramount II	116	9	9
PerForm	105	12	12
Prolific	104	12	12
Radiant-AM	105	7	7
Rebound 5.0	117	21	21
ReGen	109	7	7
Starbuck	111	4	7
WL 335HQ	113	12	21
WL 343HQ	107	3	7
WL 348AP	109	18	27
WL 355RR	106	4	7
WL 357HQ	116	21	21

*Cultivars sorted by total yield over all production years.

*Data from production year trials only, not from trials sown in 2007.

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

Trial	Soil series, elevation, # of harvests in 2007
Chazy, 2004, Page 3	Raynham variant silt loam, 185 ft., 3 harvests
Ithaca, 2004, Page 3	Madalin silt loam, 990 ft, 3 harvests
Perry, 2004, Page 4	Conesus gravelly silt loam, 1050 ft., 4 har.
Ithaca, 2005, Page 4	Williamson silt loam, 1000 ft., 3 har.
Chazy, 2005, Page 4	Raynham variant silt loam, 185 ft., 3 harvests
Ithaca, 2006, Page 4	Williamson silt loam, 1000 ft., 2 har.
Cobleskill, 2006 Pg.5	Barbour Tioga fine sandy loam, 1170 ft., 3 har.
Ithaca, 2007, Page 5	Williamson silt loam, 1000 ft., 0 har.
Warsaw, 2007, Page 5	Bath-Valois gravelly loam, 1700 ft., 2 harvests

Many Thanks to our Cooperators:

Dan VanVleet	Cornell University Farm Manager
Nick VanEck	Cornell University Farm Manager
Tim Dodge	Cornell Univ. Field Technician
Steve Lis	Cornell Univ. Field Technician
John Conklin	Cornell Univ. Mechanic
Dr. Jerry Cherney	Cornell Univ. Forage Agronomist, Professor
Dr. Mike Davis	Cornell Univ. Farm Manager at Chazy
Del Meseck	Cornell Univ. Field Assistant at Chazy
Ev Thomas	Miner Institute at Chazy, NY, Vice President
J. Keith Waldron	NYSES Integrated Pest Management
Ken Wise	Area IPM Educator
Julie Dennis	Area IPM Educator
Dr. Tom Poltynski	SUNY Cobleskill, Farm Coordinator
Tim Pajda	SUNY Cobleskill, Farm Manager
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Andy Flint	Dairy Producer in Wyoming Co.

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Ithaca, Tompkins County, Sown May 12, 2004			
	2007		3-Yr.
	Total Season	Total	% of Cks.
- tons per acre dry matter -			
Genoa	5.31	17.01	121
Lightning EXTRA	5.21	16.53	117
DKA42-15	5.16	16.50	117
6415	5.12	16.40	116
Rebound 5.0	5.23	16.33	116
WL 357HQ	5.00	16.18	115
FSG 408DP	5.04	16.18	115
LegenDairy 5.0	4.98	16.03	114
HybriForce-420/Wet	5.06	16.00	114
WL 348AP	5.08	15.92	113
6420	4.94	15.33	109
WL 335HQ	4.79	15.23	108
5312 (check)	4.75	15.19	108
Oneida Ultra	4.63	15.16	108
NOVA	4.54	14.69	104
Oneida VR (check)	4.45	14.38	102
Vernal (check)	4.03	12.69	90
			Ck. Mean
Trial Mean (T/A)	4.71	15.01	14.09
5% LSD	0.33	0.97	
CV(%)	5.6	5.2	

Chazy, Clinton County, Sown May 13, 2004

Replant of winterkilled trials planted in 2002,2003

	2007		3-Yr.
	Total Season	Total	% of Cks.
- tons per acre dry matter -			
54V46	5.19	13.10	118
Paramount II	5.22	12.88	116
DKA33-16	5.51	12.85	115
6415	5.04	12.50	112
54Q25	4.97	12.37	111
FSG 351	4.93	12.35	111
Baralfa53 HR	4.92	12.23	110
FSG 505	4.91	12.21	110
4A421	4.92	12.19	109
Guardman II	4.98	12.17	109
Dakota	4.86	12.16	109
FSG 406	5.04	12.14	109
HYTEST 410	4.82	12.12	109
Power 4.2	4.91	12.08	109
420	4.91	12.02	108
Everlast	4.86	11.94	107
Hybri-Force 400	4.68	11.87	107
HybriForce-420/Wet	4.73	11.84	106
WL 319HQ	4.89	11.80	106
Evermore	4.80	11.70	105
Oneida VR (check)	4.49	11.37	102
6400HT	4.62	11.35	102
54H91	4.48	11.27	101
Vernal (check)	4.16	11.04	99
5312 (check)	4.51	10.98	99
			Ck. Mean
Trial Mean (T/A)	4.82	11.95	11.13
5% LSD	0.42	0.95	
CV(%)	7.6	6.9	

Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2007 Forage Yields

Perry, Wyoming County, Sown April 30, 2004

Ithaca, Tompkins County, Sown April 27, 2006

	3-Yr		
	2007 Total	Total Season	% of Cks.
- tons per acre dry matter -			
Genoa	6.62	21.00	120
DKA42-15	6.30	20.84	119
Lightning EXTRA	6.48	20.75	119
Rebound 5.0	6.51	20.72	119
WL 357HQ	6.42	20.60	118
WL 348AP	6.06	19.88	114
LegenDairy 5.0	6.21	19.71	113
WL 335HQ	5.82	19.71	113
FSG 408DP	5.83	19.55	112
HybriForce-420/Wet	5.58	19.15	110
Guardsman II	5.69	18.92	108
NOVA	5.06	18.66	107
Seedway 9558	5.38	18.60	106
5312 (check)	5.19	18.53	106
Integrity	5.58	18.44	106
Oneida Ultra	4.83	17.81	102
Oneida VR (check)	5.09	17.65	101
FSG 400LH	4.70	17.15	98
Vernal (check)	4.70	16.23	93
			Ck. Mean
Trial Mean (T/A)	5.40	18.26	17.47
5% LSD	0.34	0.70	
CV(%)	5.5	3.4	

	2007	
	Total Season	% of Cks.
T/A		
ReGen	6.90	108
WL 343HQ	6.83	107
4A421	6.82	107
54V46	6.82	107
Lightning EXTRA	6.71	105
5312 (check)	6.69	105
4G418RR	6.66	105
Mariner III	6.62	104
DKA34-17RR	6.62	104
Radiant-AM	6.55	103
Starbuck	6.54	103
WL 355RR	6.46	102
Seedway 9558	6.40	101
Kingfisher 30-30 Q	6.38	100
A4440	6.36	100
Oneida VR (check)	6.36	100
Guardsman II	6.33	100
DKA41-18RR	6.32	99
Vernal (check)	6.02	95
		Ck. Mean
Trial Mean (T/A)	6.51	6.36
5% LSD	0.40	
CV(%)	4.9	

Confirmed Brown Root Rot in this trial in spring 2007.

Ithaca, Tompkins County, Sown May 5, 2005

Chazy, Clinton County, Sown May 9, 2005

	2-Yr.		
	2007 Total	Total Season	% of Cks.
- tons per acre dry matter -			
6415	6.23	11.30	109
4S419	6.06	11.22	108
Baralfa 32IQ	5.81	11.06	107
5312 (check)	5.96	11.00	106
Genoa	5.90	10.82	105
54V46	5.72	10.82	105
PerForm	5.86	10.80	104
4A421	5.82	10.67	103
Guardsman II	5.68	10.65	103
Prolific	5.71	10.64	103
Guardsman	5.79	10.64	103
361 HY	5.72	10.59	102
Integrity	5.76	10.48	101
Milestone	5.79	10.42	101
Oneida VR (check)	5.64	10.31	100
Oneida Ultra	5.58	10.14	98
53Q30	5.49	9.95	96
4R429	5.35	9.86	95
Vernal (check)	5.39	9.70	94
			Ck. Mean
Trial Mean (T/A)	5.73	10.48	10.34
5% LSD	0.36	0.65	
CV(%)	5.0	5.0	

	2-Yr		
	2007 Total	Total Season	% of Cks.
- tons per acre dry matter -			
54V46	5.47	10.47	112
4S419	5.44	10.36	110
Genoa	5.36	10.29	110
PerForm	5.15	9.90	105
4A421	5.15	9.88	105
Prolific	5.13	9.88	105
Milestone	5.16	9.87	105
WL 348AP	5.15	9.81	104
Baralfa 32IQ	5.08	9.81	104
53Q30	5.09	9.78	104
Guardsman II	5.11	9.74	104
361 HY	5.03	9.74	104
4R429	5.00	9.67	103
5312 (check)	5.05	9.58	102
Oneida VR (check)	4.86	9.32	99
Vernal (check)	4.79	9.28	99
			Ck. Mean
Trial Mean (T/A)	5.06	9.66	9.39
5% LSD	0.29	0.49	
CV(%)	5.8	5.2	

Cobleskill, Schoharie County, Sown May 2, 2006

Warsaw, Wyoming County
Sown May 3, 2007

	2007	
	Total	% of Cks.
	T/A	
Starbuck	7.63	111
Lightning EXTRA	7.55	109
4A421	7.54	109
ReGen	7.53	109
Mariner III	7.44	108
Radiant-AM	7.41	107
54V46	7.36	107
Guardsman II	7.32	106
WL 355RR	7.32	106
5312 (check)	7.27	105
Kingfisher 30-30 Q	7.21	104
DKA41-18RR	7.19	104
DKA34-17RR	7.17	104
4G418RR	7.13	103
Seedway 9558	7.12	103
Integrity	7.07	102
A4440	7.02	102
Oneida VR (check)	7.02	102
WL 343HQ	7.01	102
Vernal (check)	6.39	93
		Ck. Mean
Trial Mean (T/A)	7.22	6.90
5% LSD	0.30	
CV(%)	3.6	

	2007	
	Total	% of Cks.
	T/A	
FSG 406	4.01	104
FSG 351	3.99	104
ReGen	3.98	104
Seedway 9558	3.94	103
6415	3.92	102
Oneida VR (check)	3.92	102
WL 343HQ	3.89	101
Keystone	3.88	101
Vernal (check)	3.84	100
55V48	3.80	99
Guardsman II	3.79	99
5312 (check)	3.76	98
A 5225	3.72	97
PGI 459	3.72	97
Lander	3.69	96
AmeriStand 407TQ	3.69	96
		Ck. Mean
Trial Mean (T/A)	3.79	3.84
5% LSD	0.20	
CV(%)	4.5	

The 2007 Alfalfa trial planted in Ithaca in Spring 2007 was not harvested for yield data due to drought conditions and variable growth.

2007 Alfalfa Trials to Test Insect Resistant Cultivars

Trials harvested 3 times per year; 2005 and 2006 trials on Bath and Valois gravelly silt loam, 2007 trial on Hudson silty clay

*PLH Damage Score - 1=minor to no damage; 5=severe damage

Ithaca, Tompkins County, Sown April 29, 2005					Ithaca, Tompkins County Sown May 9, 2007		
Cultivar	2007		% of Cks.	3-Yr. Avg. PLH Damage Score	Cultivar	6-Aug	% of Cks.
	Total Season	Total Season					
	- tons / acre dry matter -					- tons per acre dry matter -	
6325	3.94	8.24	107	2.9	53H92	0.93	137
5312 (Check)	3.80	8.10	105	4.0	FSG 400LH	0.80	117
WL 347 LH	3.71	8.09	105	2.2	4P424	0.76	112
WL 345 LH	3.70	7.98	103	2.3	5312 (Check)	0.73	107
54H91	3.66	7.93	103	1.5	Oneida VR (Check)	0.72	105
Vernal (Check)	3.62	7.67	99	3.8	EverGreen 3	0.67	98
Oneida VR (Check)	3.44	7.40	96	4.5	Vernal (Check)	0.60	88
			Ck. Mean				Ck Mean
Trial Mean (T/A)	3.82	8.06	7.72	3.0	Trial Mean (T/A)	0.74	0.68
5% LSD	0.26	0.40			5% LSD	0.16	
CV(%)	6.0	4.3			CV(%)	19.1	
Ithaca, Tompkins County, Sown May 1, 2006					Ithaca, Tompkins County Sown May 9, 2007		
Cultivar	2007		2-Yr. Avg. PLH Damage Score	Cultivar	PLH Damage Score		
	Total Season	% of Cks.					
	T/A						
WL 347LH	3.40	108	1.8	53H92	1.3		
WL 345LH	3.38	108	1.8	FSG 400LH	1.9		
Enforcer	3.32	106	1.5	4P424	1.3		
Oneida VR (Check)	3.19	101	4.1	5312 (Check)	3.5		
5312 (Check)	3.14	100	3.7	Oneida VR (Check)	3.8		
Vernal (Check)	3.08	98	3.4	EverGreen 3	1.8		
53H92	2.93	93	1.1	Vernal (Check)	4.1		
			Check Mean				
Trial Mean (T/A)	3.40	3.14	2.5	Trial Mean (T/A)	2.0		
5% LSD	0.28			5% LSD	0.5		
CV(%)	7.2			CV(%)	19.7		

Table 2: Alfalfa Cultivar Features

For more information log on to the Web:

<http://plbrgen.cals.cornell.edu/programsandprojects/departmental/foragetest/>

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.	Phone Number	Web or E-mail Address
			BW	VW	FW	AN	PRR			
Evermore	Allied Seeds LLC	4	HR	HR	HR	HR	HR	1-888-305-0500	www.alliedseed.com	
Lander	Allied Seeds LLC	4		R	LR	MR	MR			
AmeriStand 407TQ	America's Alfalfa	4	HR	HR	HR	HR	HR	1-800-873-2532	www.americasalfalfa.com/#	
Radiant - AM	AMPAC Seed Company	4	HR	HR	HR	HR	HR	1-800-547-3230	www.ampacseed.com	
Baralfa 32 IQ	Barenbrug, USA	3	HR	R	HR	HR	HR	1-800-547-4101	www.barusa.com	
Baralfa 53 HR	Barenbrug, USA	5	HR	R	HR	HR	HR			
Keystone	Chemgro Seeds	3	HR	HR	HR	HR	HR	1-800-346-4769	www.chemgro.com	
Milestone	Chemgro Seeds	3	HR	R	HR	R	HR			
Paramount 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-400	Dairyland Seeds	4	HR	R	HR	R	HR	1-800-236-0163	www.dairylandseed.com	
HybriForce-420/Wet	Dairyland Seeds	4	HR	R	HR	R	HR			
PerForm	Doebler's	4	HR	HR	HR	HR	HR	1-570-753-3210	www.doebler.com	
Prolific	Doebler's	3	HR	R	HR	R	HR			
Enforcer	GROWMARK FS	4	HR	HR	HR	HR	HR	1-800-338-4769	www.fsseeds.com	
Mariner III	GROWMARK FS	4	HR	R	HR	HR	HR			
6325	Garst Seed Co.	3	HR	HR	HR	HR	HR	1-888-464-2778	www.garstseed.com	
6415	Garst Seed Co.	4	HR	HR	HR	HR	HR			
6400HT	Garst Seed Co.	4	HR	HR	HR	HR	HR			
Dakota	Northstar Seed Ltd.	4	R	MR	R	MR	HR	1-204-476-3241	www.GreatPlainsResearch.com	
NOVA	Northstar Seed Ltd.	4	HR	R	HR	R	HR			
HYTEST 410	HYTEST Seeds	4	HR	HR	HR	HR	HR	1-717-737-4529	www.hytestseeds.com	
Kingfisher 30-30Q	King's Agri-Seed	3	HR	HR	HR	HR	HR	1-717-687-6224		
420	Legacy Seeds	4	HR	R	HR	HR	HR	1-866-791-6390	www.legacyseeds.com	
Everlast	Legacy Seeds	4	HR	R	HR	HR	HR			
DKA33-16	Monsanto	3	HR	HR	HR	HR	HR	1-800-335-2676	www.monsanto.com	
DKA34-17RR	Monsanto	3	HR	HR	HR	HR	HR			
DKA41-18RR	Monsanto	4	HR	HR	HR	HR	HR			
DKA42-15	Monsanto	4	HR	HR	HR	HR	HR			
4A421	Mycogen Seeds	4	HR	HR	HR	HR	HR	1-800-MYCOGEN	www.dowagro.com/mycogen	
4G4518RR	Mycogen Seeds	4	HR	HR	HR	HR	HR			
4P424	Mycogen Seeds	4	HR	HR	HR	HR	HR			
4R429	Mycogen Seeds	4	HR	HR	HR	HR	HR			
4S419	Mycogen Seeds	4	HR	HR	HR	HR	HR			
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			
53H92	Pioneer Hi-Bred	3	HR	R	HR	HR	HR	1-800-247-6803	www.pioneer.com	
53Q30	Pioneer Hi-Bred	3	HR	HR	HR	HR	HR			
54H91	Pioneer Hi-Bred	4	HR	HR	R	HR	HR			
54Q25	Pioneer Hi-Bred	4	HR	HR	HR	HR	HR			
54V46	Pioneer Hi-Bred	4	R	HR	HR	HR	HR			
55V48	Pioneer Hi-Bred	5	HR	R	HR	HR	HR			
Power 4.2	Power Seeds	4	HR	R	HR	HR	HR	1-705-748-3000	www.powerseeds.net	
Lightning EXTRA	Preferred Seed Co.	4	HR	HR	HR	HR	HR	1-716-895-7333	www.preferredseed.com	
361 HY	Preferred Seed Co.	4	HR	HR	HR	R	HR			
A4440	Producer's Choice	4	HR	HR	HR	HR	HR	1-866-744-5710	www.producerschoiceseed.com	
A5225	Producer's Choice	5	HR	HR	HR	HR	HR			
Integrity	Producer's Choice	4	HR	HR	HR	HR	HR			
PGI 459	Producer's Choice	4	HR	HR	HR	HR	HR			
Guardman II	Seedway/FSG	4	HR	HR	HR	HR	HR	1-800-836-3710	www.seedway.com	
Oneida Ultra	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 351	Seedway/FSG	3	HR	R	HR	R	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	3	HR	R	HR	R	HR			
FSG 505	Seedway/FSG	5	HR	HR	HR	HR	HR			
Starbuck	T.A. Seeds	4	HR	R	HR	HR	HR	1-866-813-7333	www.taseeds.com	
WL 319HQ	UAP, HYTEST, AgriCulver	3	HR	HR	HR	HR	HR	1-717-653-9381	www.wiresearch.com	
WL 335HQ	HYTEST Seeds	4	HR	HR	HR	HR	HR	1-585-455-9667	rcbrown@landolakes.com	
WL 343HQ	UAP, HYTEST, AgriCulver	4	HR	HR	HR	HR	HR	1-800-836-3701	www.agriculverseeds.com	
WL 345LH	AgriCulver Seeds	4	HR	HR	HR	HR	HR			
WL 347LH	HYTEST; UAP	4	HR	HR	HR	HR	HR			
WL 348AP	UAP, HYTEST, AgriCulver	4	HR	HR	HR	HR	HR			
WL 355RR	UAP, HYTEST, AgriCulver	4	HR	HR	HR	HR	HR			
WL 357HQ	UAP, 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-Anthrachnose, Prr-Phytophthora root rot

Table 3: Red Clover and Birdsfoot Trefoil Cultivar Yield Trials- 2007 Ithaca, Tompkins Co. Page 7
 See Table 1, page 3 for description of abbreviations used in this table.

Sown April 29, 2005 Red Clover		2007			2-Yr.	
		Total Season	% of Cks.	% Stand 3-Oct	Total Season	% of Cks.
Cultivar/Experimental	Marketing Company*					
		T/A			T/A	
FP345	Allied Seed, L.L.C.	1.65	167	45	6.07	124
Kenway	Smith Seed Services	1.59	160	42	5.86	120
Dynamite	UAP NE	1.33	135	37	5.73	117
Cardinal	Blue River Organic Seed	1.48	150	43	5.53	113
PGI 33	Producer's Choice	1.46	147	46	5.50	113
FSG 9601	Seedway/FSG	1.32	133	32	5.48	112
Dominion	Forage First	1.15	116	25	5.37	110
RC9603	Allied Seed, L.L.C.	1.26	127	31	5.34	110
Marathon	WI-Check	1.13	115	32	5.04	103
Arlington	WI-Check	0.85	86	23	4.72	97
			Ck. Mean			Ck. Mean
LSD(.05)		0.38		9	0.53	

Sown May 1, 2006 Red Clover		2007		
		Total Season	% of Cks.	% Stand 3-Oct
Cultivar/Experimental	Marketing Company*			
		T/A		
Scarlet II	Dairyland Seed Company	5.27	105	94
Marathon (Check)	WI Check	5.20	104	92
C328	WI Experimental	5.20	104	94
HC 82/83	WI Experimental	5.17	103	91
Duration Extra	Preferred Seed	5.06	101	95
StarFire II	AMPAC Seed	5.06	101	94
PGI 33	Producer's Choice	4.84	97	94
Arlington (Check)	WI Check	4.82	96	94
IS-TP2	DLF International Seeds	4.73	94	93
			Ck. Mean	
LSD(.05)		0.21		2

Red Clover Cultivar/Experimental	Sown May 9, 2007 Marketing Company*	Cultivar/Experimental Marketing Company*	Production Year Data
Duration Extra	Preferred Seed	Rocket Seed Research of Oregon	will be available for these cultivars starting in 2008
StarFire II	AMPAC Seed	GO-ABR Grassland Oregon	
Raven	Seed Research of Oregon	GO-ABT Grassland Oregon	
Robust	Seed Research of Oregon		

Sown May 6, 2005 Birdsfoot Trefoil		2007			2-Yr.	
		Total Season	% of Norcen	% Stand 5-Oct	Total Season	% of Norcen
Cultivar/Experimental	Marketing Company*					
		T/A			T/A	
Pardee	Seedway/FSG/GROWMARK FS	4.17	117	70	7.15	106
Norcen	Public Check	3.56	100	50	6.77	100
Steadfast	Seed Research of Oregon	3.62	102	57	6.11	90
			Ck. Mean			
LSD(.05)		0.43	3.56	12	0.64	

Marketing Company*	Phone	Web address
Allied Seed, L.L.C.	1-888-305-0500	www.alliedseed.com
AMPAC Seed	1-541-928-1651	www.ampacseed.com
Blue River Organic Seed	1-800-370-7979	www.blueriverorgseed.com
Cal/West	1-530-666-3331	www.calwestseeds.com
Dairyland Seed Company	1-800-236-0163	www.dairylandseed.com
DLF International Seeds	1-541-369-2251	www.dlfis.com
Forage First	1-800-356-7333	www.foragefirst.com
Grassland Oregon	1-503-566-9900	
Preferred Seed	1-716-895-7333	www.preferredseed.com
Producer's Choice	1-866-744-5710	www.producerschoiceseed.com
Seed Research of Oregon	1-800-253-5766	www.sroseed.com
Seedway/FSG	1-800-836-3710	www.seedway.com
Smith Seed Services	1-888-550-2930	www.smithseed.com
UAP NE	1-315-483-9146	www.uap.com/uap

Table 4: 2007 Perennial Forage Grass Yield Summary

Ithaca, Tompkins Co., Sown 2004, 2005, 2006

T/A = tons per acre dry matter

Marketing contacts listed in Table 6 page 10

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

Soils: 2004 plantings - Madalin silt loam; 2005 plantings Rhinebeck silt loam; 2006 plantings - Williamson silt loam

Grass Species	Marketing Company	2007			2006		2005		2 or 3-Yr. Total
		Total Season	Oct. % Stand	Heading Date	Total Season	Heading Date	Total Season	Heading Date	
Perennial Ryegrass									
Sown May 18, 2004									
Grand Daddy	Seedway/FSG	2.94	73	26-May	4.43	26-May	3.21	27-May	10.58
Bastian	Check	2.71	68	23-May	4.30	24-May	3.47	22-May	10.49
Modane	Seed Research of Oregon	2.55	71	4-Jun	4.33	2-Jun	3.59	3-Jun	10.46
Citadel	Check	2.91	70	28-May	4.21	31-May	3.31	31-May	10.43
Eurostar	Seed Research of Oregon	2.58	71	29-May	4.36	31-May	3.35	3-Jun	10.29
Bargala	Barenbrug	2.46	71	29-May	4.46	31-May	3.28	3-Jun	10.20
RESPECT	DLF International Seeds	2.47	71	26-May	4.32	26-May	2.88	27-May	9.66
Proton	Seed Research of Oregon	2.58	61	6-Jun	3.57	7-Jun	3.18	6-Jun	9.33
Barsprinter	Barenbrug	1.92	74	28-May	4.38	31-May	3.01	3-Jun	9.30
LSD(.05)		0.43	6		0.48		0.39		

Tetraploid perennial ryegrass - Grand Daddy, Bastion, Modane, Citadel, Eurostar, Bargala, Proton; Diploid perennial ryegrass - RESPECT, Barsprinter

Perennial Ryegrass									
Sown May 4-5, 2005									
Clermont	Seed Research of Oregon	3.33	71	28-May	5.73	31-May			9.06
Citadel	Check	3.01	69	28-May	5.38	26-May			8.38
Bastion	Check	2.87	68	24-May	5.01	19-May			7.88
Green Gold	UAP NE	2.75	73	29-May	4.77	31-May			7.53
Barnhem	Barenbrug	2.29	76	6-Jun	4.76	7-Jun			7.05
LSD(.05)		0.53	4		0.55				

Tetraploid perennial ryegrass - Clermont, Citadel, Bastion, Green Gold; Diploid perennial ryegrass - Barnhem

Inter. and Per. Ryegrass									
Sown April 28, 2006									
Rust Rating									
2-Oct									
Tetrelite II	DLF International Seeds	6.24	66	28-May	2.1				
Boost	Seedway/FSG	6.15	83	25-May	1.5				
Aberecho	Grassland Oregon	5.93	68	20-May	2.1				
Spring Green - Festulolium	check	5.91	78	24-May	1.4				
Birger	Burlingham Seeds	5.80	75	27-May	1.8				
Opus	Burlingham Seeds	5.39	75	24-May	1.3				
Citadel	check	5.20	75	25-May	1.0				
Aberbard	Grassland Oregon	5.14	80	24-May	2.3				
FH2004A	Cropmark Seeds Ltd	5.13	59	24-May	1.0				
Linn	check	5.07	80	17-May	3.0				
BAR1M	Barenbrug	4.71	75	23-May	3.0				
Aberavon	Grassland Oregon	4.63	84	23-May	1.8				
Green Gold	UAP - NE	4.54	81	29-May	1.5				
Bandito	Grassland Oregon	2.49	5	17-May	0.0				
LSD(.05)		0.53	6		0.5				

Rust Rating: 1 is least and 3 is most.

Tetraploid perennial ryegrass - Boost, Birger, Opus, Citadel, FH2004A, GreenGold; Diploid perennial ryegrass - Aberbard, Linn, BAR1M, Aberavon
Intermediate Ryegrass - Tetrelite, Aberecho, Bandito

Festulolium									
Sown May 4-5, 2005									
Salino	Allied Seed, L.L.C.	4.26	60	28-May	6.87	26-May			11.12
Felopa	Allied Seed, L.L.C.	4.17	63	26-May	6.81	26-May			10.99
Agula	Allied Seed, L.L.C.	3.64	65	24-May	6.85	26-May			10.49
Spring Green	Check	3.62	73	28-May	5.93	22-May			9.54
LSD(.05)		0.47	4		0.44				

Tall and Meadow Fescue									
Sown May 4-5, 2005									
Select	check	6.59	74	25-May	7.54	19-May			14.13
Bull	check	6.72	74	22-May	7.22	17-May			13.94
Barcarella	Barenbrug	6.62	70	24-May	7.12	20-May			13.73
Jesup MaxQ	Pennington Seed	6.15	71	24-May	7.25	18-May			13.40
Bartura (Meadow Fescue)	check	4.46	68	24-May	6.30	19-May			10.75
Pradel (Meadow Fescue)	Barenbrug	4.19	60	26-May	6.07	26-May			10.26
LSD(.05)		0.77	5		0.28				

Tall Fescue									
Sown April 28, 2006									
Select	check	7.86	81	23-May					
GO-TF	Grassland Oregon	7.75	81	24-May					
Drover	Barenbrug	7.37	83	16-May					
Enhance	check	7.05	79	24-May					
Savory	DLF International Seeds	7.04	81	24-May					
BarElite	Barenbrug	6.80	75	26-May					
FA2003CS	Cropmark Seeds Ltd	6.20	74	23-May					
LSD(.05)		0.66	5						

Table 4: 2007 Perennial Forage Grass Yield Summary

Ithaca, Tompkins Co., Sown 2004, 2005, 2006

T/A = tons per acre dry matter

Marketing contacts listed in Table 6 page 10

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

Soils: 2004 plantings - Madalin silt loam; 2005 plantings Rhinebeck silt loam; 2006 plantings - Williamson silt loam

Grass Species	Marketing Company	2007			2006		2005		2 or 3-Yr. Total T/A
		Total Season T/A	Oct. % Stand	Heading Date	Total Season T/A	Heading Date	Total Season T/A	Heading Date	
Orchardgrass									
Sown May 18, 2004									
Stampede	Check	3.97	75	17-May	6.40	16-May	5.03	20-May	15.40
Command	Land O' Lakes	3.45	66	23-May	5.98	19-May	4.74	23-May	14.18
Baridana	Barenbrug	3.77	70	18-May	5.60	17-May	4.45	20-May	13.82
Intensiv	Barenbrug	3.10	69	26-May	5.83	26-May	4.48	25-May	13.41
Impuls	Seed Research of Oregon	3.42	69	24-May	5.38	25-May	4.03	24-May	12.83
LG 31	DLF International Seeds	3.20	66	23-May	5.04	26-May	4.36	30-May	12.61
	LSD(.05)	0.20	4		0.46		0.33		
Orchardgrass									
Sown May 4-5, 2005									
Quick Draw	UAP NE	4.60	80	14-May	6.20	15-May			10.79
Stampede	check	4.34	74	17-May	6.34	15-May			10.68
Icon	AgriCulver / Chemgro	4.13	80	17-May	6.47	15-May			10.60
Checkmate (OG0001)	Seed Research of Oregon	3.98	83	18-May	6.30	17-May			10.29
Barexcel	Barenbrug	3.86	76	17-May	6.03	16-May			9.89
Crown Royale	Preferred Seed Co.	4.07	75	18-May	5.76	16-May			9.83
Intensiv	Barenbrug	3.69	74	24-May	5.50	25-May			9.19
Baridana	Barenbrug	3.58	81	22-May	5.52	17-May			9.11
Pizza	Seed Research of Oregon	3.21	81	23-May	5.71	20-May			8.91
	LSD(.05)	0.34	4		0.47				
Orchardgrass									
Sown April 28, 2006									
Endurance	DLF International Seeds	7.28	81	17-May					
Pennlate	check	6.98	76	17-May					
IS-OG 39	DLF International Seeds	6.98	80	17-May					
Potomac	check	6.64	80	14-May					
OG 0204G	Seed Research of Oregon	6.43	75	20-May					
Olympia	Pennington Seed	6.33	85	14-May					
Montana Meadow Bromegrass	Seed Research of Oregon	6.13	65	14-May					
Intensiv	check	5.92	75	21-May					
	LSD(.05)	0.49	5						
Timothy									
Sown May 18, 2004									
Climax	Check	3.13	76	3-Jun	5.53	2-Jun	3.77	3-Jun	12.43
Chazy	Check	3.14	75	28-May	5.52	29-May	3.65	30-May	12.31
Monza	Seed Research of Oregon	2.59	71	27-May	5.39	26-May	3.76	27-May	11.74
Moverdi	Seed Research of Oregon	2.89	69	8-Jun	5.04	14-Jun	3.76	10-Jun	11.70
	LSD(.05)	0.40	5		0.51		0.49		
Timothy									
Sown May 4-5, 2005									
Talon	Land O Lakes / Chemgro	5.06	71	27-May	6.76	26-May			11.81
Treasure	Seed Research of Oregon	5.03	75	28-May	6.64	29-May			11.67
Glacier	AgriCulver	4.92	81	27-May	6.50	26-May			11.42
GO-LMT-04	UAP NE	4.66	84	26-May	6.12	2-Jun			10.78
Chazy	Check	4.46	79	28-May	5.90	29-May			10.36
Climax	Check	4.46	78	4-Jun	5.53	7-Jun			9.99
	LSD(.05)	0.37	5		0.34				
Timothy									
Sown April 28, 2006									
TM9701	Allied Seed L.L.C.	6.78	80	27-May					
Clair	check	6.40	78	26-May					
Summit	Allied Seed L.L.C.	6.16	76	27-May					
Barpenta	Barenbrug	5.95	75	11-Jun					
Crest (TM0102)	Allied Seed L.L.C.	5.81	83	1-Jun					
Climax	check	5.59	83	4-Jun					
Chazy	check	5.24	76	1-Jun					
PT2004A	Cropmark Seeds Ltd	4.30	74	4-Jun					
	LSD(.05)	0.34	4						

Table 5: Forage Grass Varieties planted in 2007 Trials

Heading Date, Forage Yield and Quality available in 2008		
Alaska Bromegrass	Hakari	Barenbrug USA
Kentucky Bluegrass	Lato	Seedway/FSG
Mountain Bromegrass	Canterbury	Barenbrug USA
Smooth Bromegrass	Doina	Barenbrug USA
Smooth Bromegrass	Olga	Barenbrug USA
Smooth Bromegrass	Peak	Seedway/FSG
Smooth Bromegrass	York	AMPAC Seed Co.
Orchardgrass	OG0203G	Allied Seed Co., L.L.C.
Orchardgrass	Shiloh II	ProSeeds Marketing
Orchardgrass	Warrior II	ProSeeds Marketing
Orchardgrass	Command	Land O'Lakes
Orchardgrass	Profit	AMPAC Seed Co.
Perennial Ryegrass	Quartermaster	Lewis Seed Co.
Perennial Ryegrass	Sierra	Lewis Seed Co.
Perennial Ryegrass	Eurostar	Seed Research of Oregon
Perennial Ryegrass	Power	AMPAC Seed Co.
Perennial Ryegrass	Tonga	AMPAC Seed Co.
Perennial Ryegrass	GO-ABM	Grassland Oregon
Perennial Ryegrass	GO-ABS	Grassland Oregon
Perennial Ryegrass	GO-ABV	Grassland Oregon
Perennial Ryegrass	GO-ABZ	Grassland Oregon
Tall Fescue	TF0202	Allied Seed Co., L.L.C.
Tall Fescue	IS-FTF	DLF International Seeds
Tall Fescue	RAD-ERF48	ProSeeds Marketing
Tall Fescue	BarElite	Barenbrug USA
Tall Fescue	Stockman	Seed Research of Oregon
Timothy	Barpenta	Barenbrug USA
Timothy	Derby	Allied Seed Co., L.L.C.

Table 6: Forage Grass Varieties

Marketing Company*	Phone	Web address
AgriCulver	1-800-836-3701	www.agriculverseeds.com
Allied Seed Co., L.L.C.	1-888-305-0500	www.alliedseed.com
AMPAC Seed Co.	1-541-928-1651	www.ampacseed.co
Barenbrug USA	1-800-547-4101	www.barusa.com
Burlingham Seeds	1-503-623-2306	www.burlinghamseeds.com
Chemgro	1-800-346-4769	www.chemgro.com
Cropmark Seeds Ltd		www.cropmark.co.nz
DLF International Seeds	1-541-369-2251	www.dlfis.com
Grassland Oregon	1-503-566-9900	
Land O' Lakes	1-800-328-9680	www.landolakesinc.com
Lewis Seed Co.	1-541-466-3704	
Pennington Seed	1-800-732-3332	www.penningtonseed.com
Preferred Seed Co.	1-716-895-7333	www.preferredseed.com
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
UAP NE	1-315-483-9146	www.uap.com/uap

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

Intermediate ryegrass - BO-ABV

Table 7: Spring, First Harvest Forage Quality Data for Grass Varieties - 2006 DATA for trial planted in 2004

NDF = neutral detergent fiber, **IVTD** = in vitro true digestibility (48 hour digestion)

RFQ = relative feed quality. First harvest forage RFQ, milk per ton, and milk per acre were predicted by using **MILK2000** from U. of Wisconsin.

Boot Stage is date when 5 heads in a 3.5 x 16 foot plot were visible

Maturity score T=number of nodes; R 0=boot stage, R 1=head partially emerged; R 2=head fully emerged; R 3=peduncle fully emerged.

Ammonium Nitrate was applied at spring green-up and after each of the first three harvests at a rate of 200 lb/A.

	Forage Quality at Boot Stage 2006				Forage Quality at First Harvest in 2006								2-Year Milk per Acre	
	Date at Boot Stage	% PROTEIN	% NDF	% IVTD	Date at Harvest	Yield Harvest 1	Maturity Score	% PROTEIN	% NDF	% IVTD	RFQ	Milk per Ton		Milk per Acre
Perennial Ryegrass and Festulolium (F)														
Bastian	24-May	15	35	96	24-May	0.80	R 0	16	35	97	310	4,459	3,586	7,760
Grand Daddy	26-May	15	39	96	24-May	0.84	T 2	16	33	98	325	4,520	3,802	7,304
RESPECT	26-May	16	42	94	24-May	0.78	T 3	16	39	97	281	4,418	3,451	5,673
Eurostar	31-May	14	45	93	24-May	0.47	T 1	16	31	100	359	4,644	2,163	4,994
Bargala	31-May	15	45	94	24-May	0.48	T 2	17	35	99	318	4,557	2,184	4,832
Barsprinter	31-May	14	50	91	24-May	0.60	T 2	17	37	97	297	4,467	2,668	4,734
Citadel	31-May	14	46	94	24-May	0.41	T 2	18	35	99	327	4,604	1,865	4,186
Modane	2-Jun	14	47	93	24-May	0.45	T 1	16	32	99	342	4,561	2,046	4,174
Proton	7-Jun	13	50	92	24-May	0.28	T 2	16	32	99	343	4,589	1,286	3,225

Orchardgrass

Command	19-May	16	53	92	24-May	2.01	R 0.5	15	52	92	210	4,110	8,275	13,655
Stampede	16-May	18	54	92	24-May	2.02	R 1.5	16	56	90	189	3,927	7,927	12,739
Baridana	17-May	18	54	92	24-May	1.82	R 1.0	16	56	91	195	4,004	7,295	11,726
Intensiv	26-May	18	56	90	24-May	1.80	T 2	16	54	92	203	4,069	7,326	11,516
Impuls	25-May	15	52	92	24-May	1.62	T 2	18	49	94	228	4,240	6,869	10,660
LG 31	26-May	16	56	91	24-May	1.14	T 2	17	51	94	221	4,210	4,787	7,439

Timothy

Monza	26-May	14	55	88	24-May	2.04	T 3	15	53	90	197	3,960	8,073	13,773
Climax	2-Jun	14	64	82	24-May	1.77	T 2	16	50	93	218	4,137	7,308	11,465
Chazy	29-May	14	60	86	24-May	1.83	T 2	16	48	93	225	4,161	7,601	11,126
Moverdi	14-Jun	10	70	79	24-May	1.37	T 1	15	48	93	225	4,160	5,687	10,035

NDF = neutral detergent fiber, **IVTD** = in vitro true digestibility (48 hour digestion), **NDFD** = digestible NDF, **RFQ** = relative feed quality. First harvest forage RFQ, milk per ton, and milk per acre were predicted by using **MILK2000** from U. of Wisconsin. **Boot Stage** is date when 5 heads in a 3.5 x 16 foot plot were visible. **Maturity score** T=number of nodes; R 0=boot stage, R 1=head partially emerged; R 2=head fully emerged; R 3=peduncle fully emerged. Ammonium Nitrate was applied at spring green-up and after each of the first three harvests at a rate of 200 lb/A.

	Forage Quality at Boot Stage 2006				Forage Quality at First Harvest in 2006								
	Date at Boot Stage	% PROTEIN	% NDF	% IVTD	Date at Harvest	Yield Harvest 1	Maturity Score	% PROTEIN	% NDF	% IVTD	RFQ	Milk per Ton	Milk per Acre
Perennial Ryegrass													
Bastion	19-May	15	39	95	23-May	1.62	T 3	13	38	95	274	4305	6990
Clermont	31-May	12	47	92	23-May	1.23	T 3	15	37	97	296	4449	5464
Citadel	26-May	13	39	95	23-May	1.06	R 0.0	14	36	97	300	4429	4674
Green Gold	31-May	12	45	92	23-May	0.96	T 2	15	34	97	313	4436	4277
Barnhem	7-Jun	12	51	91	23-May	0.56	T 2	15	36	97	301	4448	2470
Festulolium													
Agula	26-May	12	42	93	23-May	2.21	T 3.0	14	40	94	255	4213	9330
Felopa	26-May	12	43	93	23-May	2.19	T 3.5	13	40	94	260	4233	9258
Salino	26-May	12	46	92	23-May	2.17	T 2.5	13	41	94	248	4185	9072
Spring Green	22-May	12	39	95	23-May	1.75	T 3.5	14	40	95	266	4327	7589
Tall and Meadow Fescue													
Bartura (MF)	19-May	18	49	92	23-May	1.73	R 0.5	17	48	92	217	4070	7041
Select	19-May	17	52	87	23-May	1.59	R 0.5	17	51	87	180	3658	5817
Jesup MaxQ	18-May	18	50	88	23-May	1.47	R 1.0	16	50	88	190	3761	5511
Bull	17-May	18	53	85	23-May	1.55	R 2.0	17	53	84	162	3452	5338
Pradel (MF)	26-May	15	53	89	23-May	1.32	R 0.0	17	49	91	210	4004	5283
Barcarella	20-May	17	52	86	23-May	1.35	R 0.5	17	51	87	178	3639	4899
Orchardgrass													
Icon	15-May	17	53	91	23-May	2.17	R 2.0	14	59	88	176	3821	8277
Checkmate (OG0001)	17-May	16	54	90	23-May	2.11	R 1.0	15	55	89	186	3873	8153
Stampede	15-May	18	54	91	23-May	2.09	R 1.5	16	58	87	172	3729	7803
Barexcel	16-May	17	55	91	23-May	2.05	R 1.0	14	57	88	178	3805	7785
Pizza	20-May	15	55	91	23-May	1.85	T 3	16	53	92	204	4048	7484
Quick Draw	15-May	17	56	89	23-May	1.87	R 2.5	14	58	88	175	3770	7064
Crown Royale	16-May	17	55	90	23-May	1.83	R 1.0	14	56	89	183	3849	7048
Intensiv	25-May	14	57	89	23-May	1.69	T 3	16	56	90	189	3926	6645
Baridana	17-May	17	57	89	23-May	1.68	R 0.0	16	57	89	180	3847	6480
Timothy													
Talon	26-May	13	61	85	23-May	2.69	T 3	13	58	87	169	3693	9949
Treasure	29-May	11	65	81	23-May	2.62	T 3	14	57	87	174	3730	9762
GO-LMT-04	2-Jun	12	68	79	23-May	2.30	T 2	15	53	91	202	4023	9269
Glacier	26-May	13	58	86	23-May	2.36	T 3	14	55	88	179	3778	8923
Chazy	29-May	14	59	87	23-May	2.09	T 2	15	49	92	214	4069	8518
Climax	7-Jun	11	68	79	23-May	1.88	T 2	15	51	92	212	4085	7689

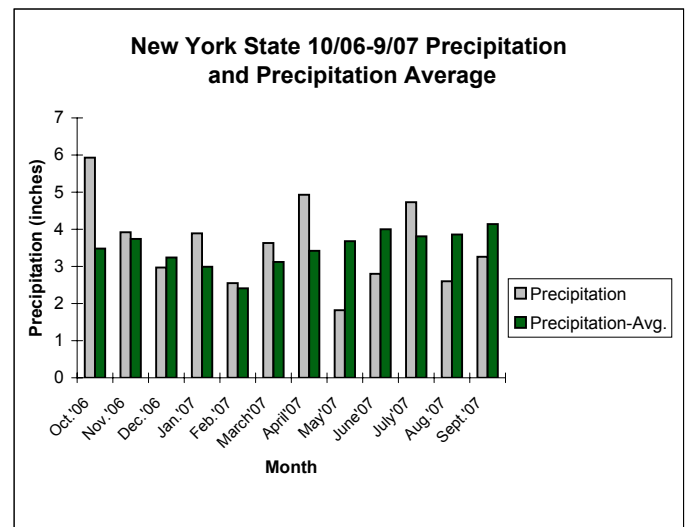
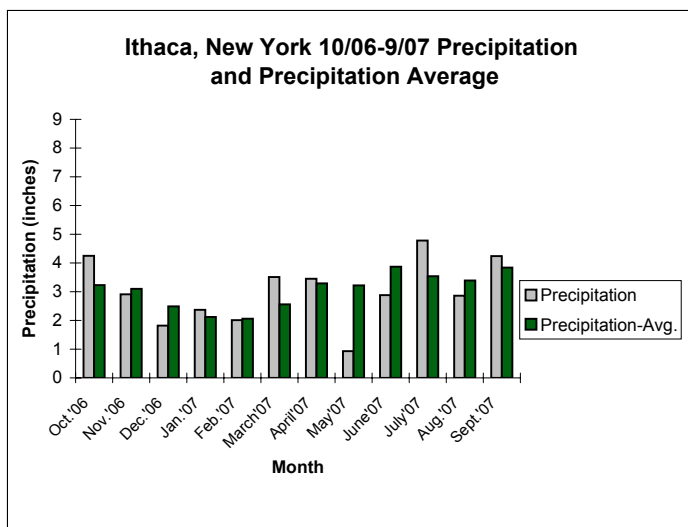
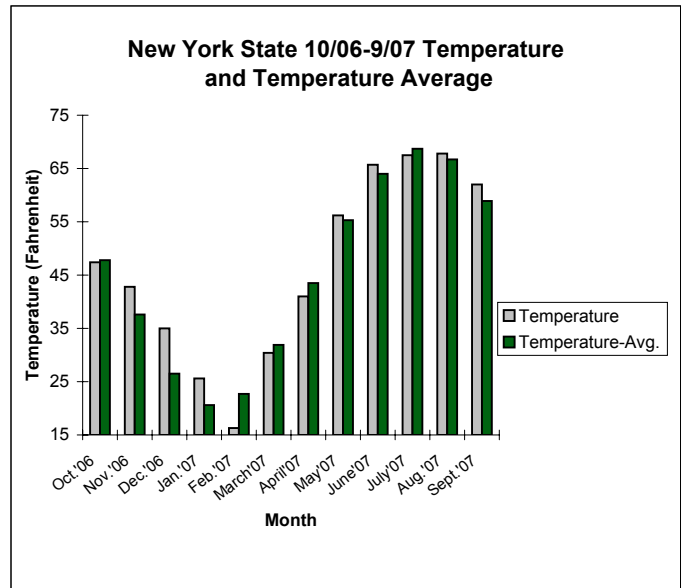
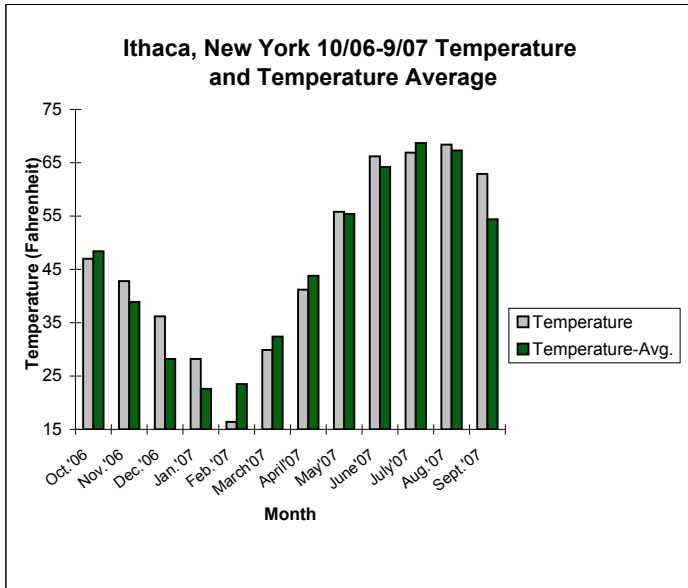


Figure 1: Ithaca, New York 10/06-9/07 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell University.

Figure 2: New York State 10/06-9/07 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell University.

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