

## **NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS -2005**

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

Forage yield trials are planted and harvested annually by Cornell University. Each year trials are planted at Ithaca and at another location in New York State. Trials are managed for four years; seeding year and three production years.

The plot size seeded is 3.5 ft. by 20 ft. and the plot size harvested is 3.5 ft. by 13 ft. Soil fertility is maintained at high levels by fertilizing prior to planting with 300 lb/A of 10-20-20 and by fall fertilizing each year with 300 lb/A 0-15-30.

### **Alfalfa:**

Below is a table of trial location, table of trial yield data, soil series, and elevation for the alfalfa trials.

<b>Trial / Table #</b>	<b>Soil series, elevation</b>
Ithaca, 2002 / 1	Niagra silt loam, 960 ft.
Cobleskill, 2002 / 2	Barbour Tioga fine sandy loam, 1170 ft.
Ithaca, 2003 / 3, 8	Erie channery silt loam, 960 ft.
Ithaca, 2004 / 4	Madalin silt loam, 990 ft.
Perry, 2004 / 5	Conesus gravelly silt loam, 1050 ft.
Chazy, 2004,5 / 6,7	Raynham variant silt loam, 185 ft.
Ithaca, 2005 / 7	Williamson silt loam, 915 ft
Ithaca, 2002 / 8	Dalton channery silt loam, 1010 ft.
Ithaca, 2005 / 8	Wallington silt loam, 1000 ft.

Five or six replications of alfalfa plots are seeded at a rate of 18 lbs/acre. Pesticides are applied as needed. Velpar L (2 – 3 pints/A) is applied in the early spring prior to the first and second production years. For insect control, Warrior is applied as needed (0.2 pints/A). Grassy weeds are controlled with Poast (2.5 pints/acre).

### **Red Clover and Birdsfoot Trefoil:**

Six replications of red clover plots are seeded at a rate of 15 lb per acre and of birdsfoot trefoil plots are seeded at a rate of 10 lb per acre. Pesticides are applied as needed. Grassy weeds are controlled with Poast (2.5 pints/acre).

### **Forage Grass:**

For each grass species, entries are planted in a trial with four replicates. All entries within a species are harvested at the same time, starting in mid-May. The trials are harvested four times per year.

In early spring, and following each harvest except the fourth harvest, the plots are fertilized with 200 lb/A ammonium nitrate (33-0-0). Each fall, plots are sprayed with Banvel (1 pt/A) to control broadleaf weeds.

In addition to the four replicates for yield, an additional replicate is planted in the same field to obtain heading dates (date when five heads are visible) and forage quality data. Four samples for forage quality are taken from each entry in this replicate for the first two production years, two samples at first harvest and two samples at late boot stage. These four samples per entry will be dried, ground, and analyzed by NIRS. Data reported will include, but not be limited to yield, heading date, percent crude protein and percent neutral detergent fiber, and *invitro* digestible dry matter (48 hr.) at first harvest, and percent crude protein, percent neutral detergent fiber, and *invitro* digestible dry matter (48 hr.) at late-boot stage. values will also be available.

### **2005 Growing Season.**

Forage yields for 2005 were disappointingly low due to two factors. First, May was cooler and drier than normal. The temperature was 3.2 degrees Fahrenheit lower than average for the entire state and was 4.8 degrees lower for Ithaca where over half of the yield trials are planted. Precipitation in May was 2.3 inches lower than average for the entire state and was 1.9 inches lower than average for Ithaca. Forage maturity was not strongly affected by the May weather, so grasses started heading out in mid-May and the alfalfa was at early bloom stage in the first week in June as usual, even though forages were only about half the normal height.

Secondly, the months of July, August, and September were dry and hot, particularly in the Fingerlakes Region. In Ithaca, the average temperature was 3.8 degrees higher than normal and rain was 4.5 inches lower than normal. Over the growing season, Ithaca had 13 days with temperatures greater than or equal to 90 degrees Fahrenheit.

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.

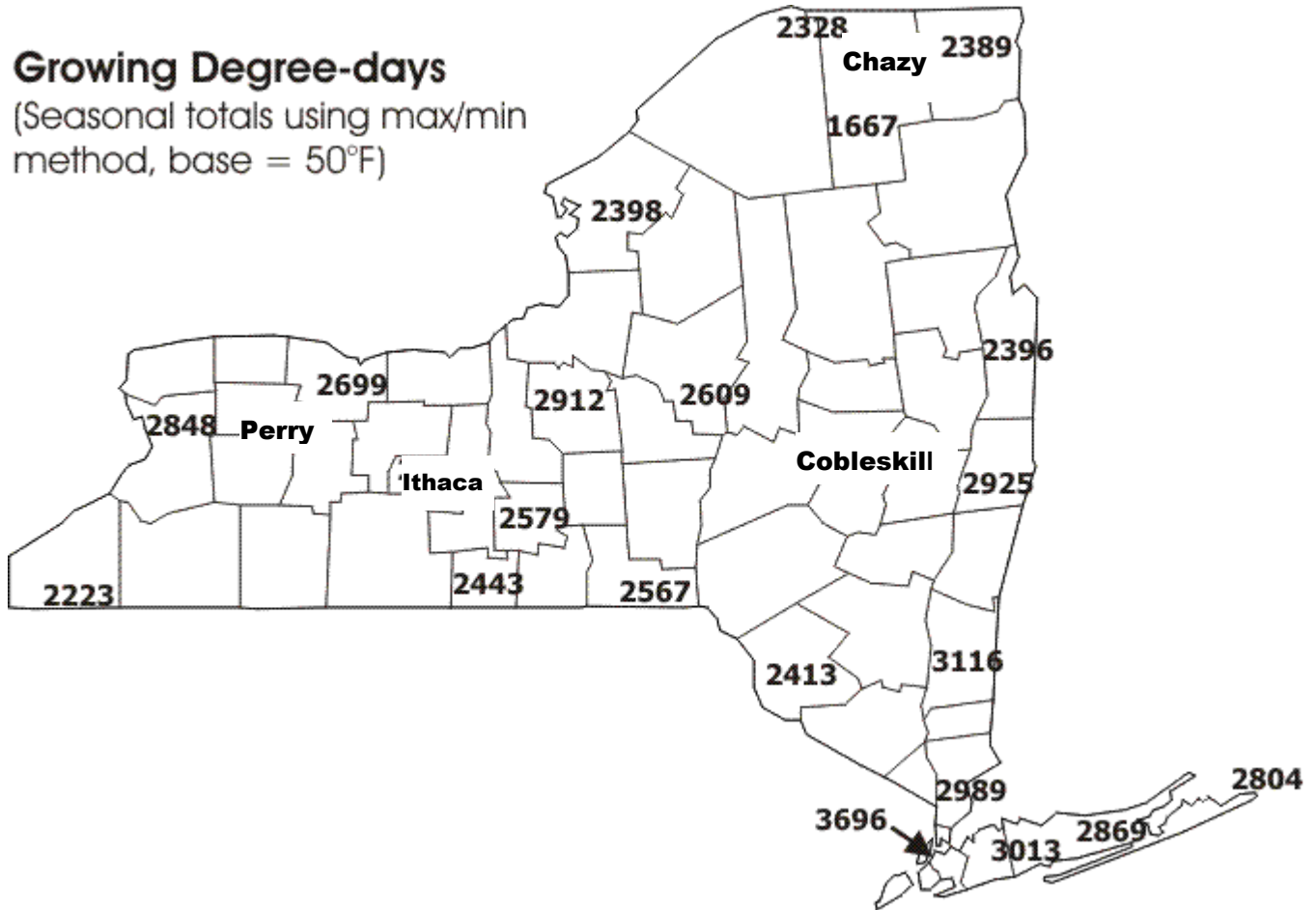


Figure 1: 2005 NYS Growing Degree Day and Trial Location Map. Map by Dr. Paul Weston, Cornell University  
<http://www.entomology.cornell.edu/Extension/Woodys/GDDTracker.htm>

**Many Thanks to our Cooperators:**

Dan VanVleet	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. Professor
Dr. Mike Davis	Cornell Univ. Farm Manager at Chazy
Del Meseck	Cornell Univ. Field Assistant at Chazy
Ev Thomas	Miner Institute, Chazy, NY, Vice Pres.
J. Keith Waldron	NYSES Integrated Pest Management

Ken Wise	Area IPM Educator
Julie Stavisky	Area IPM Educator
Dr. Doug Goodale	SUNY Cobleskill, Dean of Ag. and Nat. Res.
Gary Butler	SUNY Cobleskill, Farm Manager
Bruce Tillapaugh	Wyoming County Cooperative Extension
Mike Dueppengiesser	Dairy Producer in Wyoming Co.

**Many Thanks to our Summer and Seasonal Employees:**  
James Kazda, Heidi Barreiro, James Panels, John Shiffer, Kristina Plath, May Zaw, Tim Atkins, Sarah Mcconnachie

Questions or comments? Please contact Julie Hansen, [jlh17@cornell.edu](mailto:jlh17@cornell.edu), 607-255-5043.

Alfalfa Cultivar/ Experimental Pop.	Table								Alfalfa Cultivar/ Experimental Pop.	Table							
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
6325								x	Everlast			x			x		
30Q136							x		Evermore			x			x		
361 HY							x		Feast +EV	x	x						
3M49	x	x	x						FG42T129							x	
41M117				x					FSG 351			x			x		
420			x			x			FSG 400LH					x			
42A114							x		FSG 406			x			x		
4375LH			x					x	FSG 408DP				x	x			
4A421	x		x			x	x		FSG 505			x			x		
4R429							x		Genoa				x	x		x	
4S35							x		GPVL44							x	
4S419							x		Guardzman II					x	x	x	
53Q30							x		Hi Yielder							x	
54H46	x								Hybri-Force 400	x	x				x		
54H91			x			x		x	HybriForce-420/Wet			x	x	x	x		
54Q25			x			x			HYTEST 410	x	x				x		
54V46			x			x	x		Integrity					x		x	
6400HT			x			x			LegenDairy 5.0				x	x			
6415			x	x		x	x		Lightning EXTRA				x	x			
6420				x					Meadowlark							x	
AA104E							x		Milestone							x	
AA106E							x		NOVA				x	x			
AA107E							x		NY0131	x	x		x	x			
AA108E							x		Oneida Ultra	x	x	x	x	x		x	
AA110E							x		Paragon BR	x							
AmeriStand 403T	x								Paramount II	x	x				x		
Baralfa 32IQ							x		Pegasus							x	
Baralfa 53 HR	x					x			Power 4.2			x			x		
Bobwhite				x					Prolific							x	
BPR 387							x		Rebound 5.0				x	x			
CK2000								x	Reward II	x							
CW 15030				x					Seedway 9558	x	x			x			
Dak9900			x						Tribute	x							
Dakota			x			x			WL 319 HQ	x					x		
DKA33-16			x			x			WL 327		x						
DKA42-15				x	x				WL 335 HQ				x	x			
Double Eagle							x		WL 345 LH							x	
DS 108 HYB	x								WL 346LH			x				x	
DS106 HYB	x								WL 347 LH							x	
DS107 HYB	x								WL 348 AP				x	x		x	
DS304 HYB			x						WL 357 HQ				x	x			
DS307			x						ZG 0344A				x				
									ZG 0347A				x				

**TABLE 1: NEW YORK-Central  
Harvest by Harvest Ithaca, Tompkins Co., Sown May 10, 2002  
Summary**

	2005				2004	2003	3-Yr.		% Stand 21-Sep-05
	15-Jun (adj.)	28-Jul (adj.)	7-Sep (adj.)	Total (adj.)	Total (adj.)	Total (adj.)	Total (adj.)	% of Ck. Mean	
	- tons per acre dry matter -				-- tons per acre dry matter --				
<b>RELEASED CULTIVARS</b>									
Seedway 9558	2.13	1.73	0.73	4.60	4.78	4.97	14.36	114	86
HYTEST 410	2.19	1.85	0.84	4.89	4.39	4.96	14.25	113	87
Paragon BR	2.11	1.85	0.87	4.81	4.39	4.99	14.19	112	89
4A421	2.17	2.00	0.86	5.03	4.14	4.83	14.01	111	87
WL 319HQ	2.15	1.79	0.79	4.72	4.30	4.91	13.92	110	87
Tribute	2.22	1.93	0.84	5.00	4.11	4.76	13.87	110	89
Paramount II	2.03	1.80	0.79	4.63	4.38	4.81	13.83	109	87
AmeriStand 403T	2.17	1.83	0.75	4.75	4.19	4.70	13.62	108	87
5312 (check)	2.11	1.70	0.75	4.55	4.32	4.57	13.43	106	87
Reward II	2.10	1.76	0.79	4.65	3.86	4.87	13.40	106	81
Hybri-Force 400	1.98	1.80	0.82	4.60	4.05	4.70	13.34	105	83
Oneida Ultra	1.92	1.62	0.69	4.24	4.31	4.61	13.18	104	83
Baralfa 53 HR	1.98	1.68	0.77	4.43	3.89	4.77	13.10	104	81
Feast +EV	1.99	1.61	0.67	4.27	4.05	4.38	12.69	100	88
Oneida VR (check)	1.85	1.66	0.67	4.19	3.68	4.45	12.32	97	83
Vernal (check)	1.91	1.51	0.64	4.07	3.79	4.32	12.20	96	77
<b>EXPERIMENTAL STRAINS</b>									
54H46	2.14	1.85	0.81	4.79	4.69	5.08	14.56	115	90
NY0131	2.29	1.72	0.72	4.72	4.47	5.02	14.20	112	89
DS 108 HYB	2.04	1.96	0.85	4.85	4.24	4.90	13.99	111	89
DS106 HYB	2.15	1.90	0.84	4.89	4.23	4.76	13.89	110	84
DS107 HYB	2.23	1.72	0.78	4.72	4.19	4.82	13.75	109	88
3M49	2.11	1.69	0.64	4.43	4.22	4.85	13.49	107	86
								Ck. Mean	
Trial Mean	2.01	1.69	0.73	4.44	4.14	4.69	13.27	12.65	85
P-value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		0.0002
LSD (%)	0.33	0.27	0.13	0.64	0.46	0.31	1.12		8
CV (%)	13.1	12.5	14.1	11.4	8.9	5.3	6.7		7.2
MCV (%)	16	16	18	14	11	7	8		
LSR (%)	44	39	30	39	36	28	33		
Lattice Efficiency	437%	213%	206%	345%	451%	239%	440%		

\*In both 2004 and 2003, third harvest data were not included in analyses.

In 2005, third harvest data were included in analyses.

Trial means are for 32 entries and five replications.

**TABLE 2:**  
**Harvest by Harvest**  
**Summary**

**NEW YORK-Eastern**  
**Cobleskill, Schoharie County, Sown April 24, 2002**

	2005					2004	2003	3-Yr.		% Stand 9-Aug-05
	19-May (adj.)	23-Jun (adj.)	26-Jul (adj.)	8-Sep (adj.)	Total (adj.)	Total (adj.)	Total (adj.)	Total (adj.)	% of Cks.	
	----- tons per acre dry matter -----					- tons per acre dry matter -				
<b>RELEASED CULTIVARS</b>										
HYTEST 410	1.57	1.54	1.58	0.86	5.57	7.13	6.46	19.18	118	80
Paramount II	1.35	1.47	1.53	0.83	5.19	7.11	6.39	18.70	115	79
WL 327	1.19	1.35	1.48	0.85	4.88	6.91	6.42	18.23	112	78
Hybri-Force 400	1.26	1.28	1.37	0.75	4.65	6.65	6.41	17.74	109	80
Seedway 9558	1.20	1.31	1.36	0.73	4.58	6.73	6.39	17.72	109	77
Oneida Ultra	0.93	1.22	1.31	0.76	4.22	6.41	6.49	17.12	106	72
Oneida VR (check)	1.07	1.20	1.28	0.70	4.24	6.21	6.11	16.56	102	75
5312 (check)	1.16	1.26	1.29	0.66	4.35	6.25	5.86	16.47	102	77
Feast +EV	0.92	1.24	1.29	0.65	4.13	6.16	5.86	16.16	100	78
Vernal (check)	0.99	1.16	1.29	0.59	4.04	5.73	5.82	15.60	96	73
<b>EXPERIMENTAL STRAINS</b>										
NY0131	1.12	1.31	1.40	0.79	4.64	7.04	6.71	18.39	113	77
3M49	1.30	1.37	1.50	0.67	4.86	6.72	6.20	17.80	110	81
Trial Mean (T/A)	1.03	1.23	1.325	0.69	4.28	6.33	6.12	16.73	Ck. Mean 16.21	74
P-value (entries)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		0.0001
5% LSD	0.15	0.11	0.12	0.10	0.39	0.32	0.26	0.80		5
CV(%)	12.9	7.5	7.6	13.0	7.8	4.4	3.6	4.2		5.5
MCV (%)	15	9	9	14	9	5	4	5		
LSR (%)	14	18	25	35	16	21	23	18		
Lattice Efficiency	105%	155%	176%	365%	169%	158%	262%	212%		

**TABLE 3: NEW YORK-Central  
Harvest by Harvest Ithaca, Tompkins Co., Sown April 29, 2003  
Summary**

	2005			2004	2-Yr		% Stand 29-Jul-05	
	3-Jun (adj.)	14-Jul (adj.)	24-Aug (adj.)	Total (adj.)	Total (adj.)	% of Cks.		
----- tons per acre dry matter -----								
<b>RELEASED CULTIVARS</b>								
6415	1.63	1.63	0.70	3.96	5.18	9.15	114	94
4A421	1.59	1.69	0.64	3.92	5.18	9.11	114	94
54V46	1.50	1.67	0.65	3.81	5.22	9.02	113	94
DKA33-16	1.56	1.69	0.65	3.91	5.10	9.00	113	93
FSG 505	1.44	1.70	0.71	3.84	5.09	8.93	112	94
420	1.52	1.64	0.64	3.80	5.03	8.83	111	93
Evermore	1.42	1.64	0.65	3.70	4.96	8.67	109	94
FSG 351	1.42	1.65	0.64	3.71	4.92	8.63	108	94
FSG 406	1.54	1.61	0.67	3.82	4.78	8.60	108	93
4375LH	1.47	1.64	0.55	3.66	4.89	8.55	107	91
HybriForce-420/Wet	1.38	1.68	0.66	3.72	4.83	8.55	107	93
54Q25	1.44	1.58	0.62	3.64	4.90	8.53	107	93
Dakota	1.34	1.65	0.69	3.67	4.87	8.53	107	93
WL 346LH	1.42	1.60	0.59	3.61	4.78	8.39	105	94
Oneida VR (check)	1.41	1.59	0.55	3.55	4.82	8.37	105	92
Oneida Ultra	1.34	1.63	0.59	3.56	4.75	8.31	104	91
Power 4.2	1.42	1.57	0.65	3.64	4.66	8.31	104	92
5312 (check)	1.39	1.61	0.56	3.57	4.74	8.30	104	92
Everlast	1.32	1.58	0.54	3.45	4.78	8.23	103	92
6400HT	1.33	1.58	0.57	3.47	4.70	8.18	102	93
54H91	1.26	1.52	0.49	3.28	4.60	7.88	99	92
Vernal (check)	1.09	1.53	0.44	3.07	4.23	7.31	91	90
<b>EXPERIMENTAL STRAINS</b>								
DS304 HYB	1.64	1.77	0.74	4.15	5.12	9.26	116	94
Dak9900	1.36	1.68	0.67	3.72	5.05	8.78	110	94
3M49	1.40	1.55	0.58	3.54	4.98	8.53	107	93
DS307	1.34	1.63	0.65	3.62	4.82	8.45	106	92
Trial Mean (T/A)	1.41	1.62	0.61	3.64	4.84	8.48	Ck. Mean 7.99	93
P-value (entries)	0.0001	0.0068	0.0001	0.0001	0.0001	0.0001		0.0001
5% LSD	0.12	0.11	0.07	0.22	0.32	0.48		1.9
CV(%)	6.5	5.5	9.0	4.8	5.3	4.5		1.6
MCV (%)	9	7	11	6	7	7		
LSR (%)	22	42	18	19	31	23		
Lattice Efficiency	162%	237%	132%	133%	140%	151%		

**Table 4: NEW YORK - Central**  
**Harvest by Harvest Ithaca, Tompkins Co., Sown May 12, 2004**  
**Summary**

	2005					
	7-Jun (adj.)	14-Jul (adj.)	26-Aug (adj.)	Total (adj.)	% of Cks.	% Stand 29-Jul
---- tons per acre dry matter ----						
<b>RELEASED CULTIVARS</b>						
DKA42-15	2.14	2.20	1.22	5.55	112	91
Genoa	2.15	2.10	1.26	5.53	111	94
Ligntrning EXTRA	2.13	2.19	1.15	5.48	110	94
FSG 408DP	2.09	2.19	1.20	5.46	110	91
6415	2.09	2.22	1.13	5.46	110	94
WL 357HQ	2.12	2.14	1.15	5.44	110	94
Rebound 5.0	2.12	2.17	1.14	5.41	109	92
HybriForce-420/Wet	2.05	2.15	1.17	5.39	109	93
WL 348AP	2.08	2.19	1.12	5.38	109	93
LegenDairy 5.0	2.05	2.16	1.14	5.34	108	94
6420	2.10	2.15	1.07	5.32	107	93
5312 (check)	2.11	2.11	1.07	5.29	107	92
Oneida Ultra	2.02	2.19	1.10	5.29	107	91
WL 335HQ	1.95	2.13	1.10	5.20	105	94
NOVA	1.97	2.06	1.10	5.13	103	92
Oneida VR (check)	1.95	2.02	1.00	4.97	100	92
Vernal (check)	1.69	1.96	0.96	4.62	93	89
<b>EXPERIMENTAL STRAINS</b>						
Bobwhite	2.15	2.22	1.22	5.57	112	93
41M117	2.07	2.17	1.22	5.46	110	93
CW 15030	2.01	2.17	1.27	5.45	110	94
NY0131	2.07	2.21	1.14	5.42	109	90
ZG 0347A	1.87	2.11	1.09	5.06	102	93
ZG 0344A	1.90	2.03	0.96	4.88	98	92
					Ck. Mean	
Trial Mean (T/A)	1.92	2.07	1.06	5.05	4.96	90
P-value (entries)	0.0001	0.0001	0.0001	0.0001		0.0001
5% LSD	0.19	0.15	0.12	0.36		4
CV(%)	7.8	5.9	8.9	5.8		3.3
MCV (%)	10	7	11	7		
LSR (%)	13	15	9	10		
Lattice Efficiency	250%	116%	182%	150%		

**Table 5**  
**Harvest by Harvest**  
**Summary**

**NEW YORK**  
**Perry, Wyoming Co., Sown April 30, 2004**

**Page 8**

	2005					% of Cks.
	31-May (adj.)	29-Jun (adj.)	2-Aug (adj.)	22-Sep (adj.)	Total (adj.)	
----- tons per acre dry matter -----						
<b>RELEASED CULTIVARS</b>						
DKA42-15	2.68	1.86	1.56	1.48	7.58	118
Genoa	2.80	1.79	1.56	1.36	7.50	117
Lightning EXTRA	2.68	1.81	1.54	1.37	7.40	115
Rebound 5.0	2.72	1.75	1.48	1.43	7.38	115
WL 357HQ	2.77	1.73	1.48	1.36	7.34	114
WL 348AP	2.67	1.74	1.46	1.36	7.22	113
NOVA	2.57	1.60	1.44	1.55	7.16	112
WL 335HQ	2.54	1.67	1.51	1.41	7.13	111
FSG 408DP	2.62	1.66	1.45	1.38	7.12	111
HybriForce-420/Wet	2.58	1.64	1.41	1.41	7.04	110
5312 (check)	2.61	1.63	1.37	1.36	6.96	108
LegenDairy 5.0	2.57	1.70	1.46	1.21	6.95	108
Seedway 9558	2.59	1.62	1.24	1.39	6.83	106
Guardman II	2.50	1.70	1.28	1.33	6.81	106
Oneida Ultra	2.49	1.62	1.33	1.37	6.81	106
Integrity	2.52	1.59	1.37	1.20	6.68	104
FSG 400LH	2.45	1.61	1.31	1.24	6.60	103
Oneida VR (check)	2.40	1.48	1.24	1.38	6.50	101
Vernal (check)	2.12	1.36	1.10	1.22	5.79	90
<b>EXPERIMENTAL STRAINS</b>						
NY0131	2.57	1.60	1.35	1.44	6.96	108
Trial Mean (T/A)	2.45	1.60	1.32	1.29	6.66	Ck. Mean
P-value (entries)	0.0001	0.0001	0.0001	0.0001	0.0001	6.42
5% LSD	0.15	0.12	0.08	0.07	0.27	
CV(%)	5.3	6.8	5.6	4.8	3.6	
MCV (%)	6	8	6	5	4	
LSR (%)	8	11	8	8	6	
Lattice Efficiency	166%	156%	136%	161%	152%	



Harvest by Harvest Summary  
 Chazy, Clinton County, Sown May 13, 2004

	2005					
	8-Jun (adj.)	20-Jul (adj.)	29-Aug (adj.)	Total (adj.)	% of Cks.	% Stand 10-May
--- tons per acre dry matter ---						
<b>RELEASED CULTIVARS</b>						
54V46	1.61	1.34	0.92	3.86	118	93
FSG 351	1.53	1.26	0.85	3.64	112	92
Paramount II	1.53	1.26	0.85	3.64	112	91
Hybri-Force 400	1.54	1.20	0.84	3.59	110	93
54Q25	1.49	1.24	0.85	3.58	110	93
FSG 505	1.48	1.25	0.84	3.57	110	92
Baralfa 53 HR	1.45	1.25	0.82	3.52	108	91
6415	1.43	1.26	0.82	3.50	107	94
HYTEST 410	1.51	1.22	0.76	3.50	107	91
Dakota	1.44	1.22	0.84	3.50	107	93
4A421	1.45	1.21	0.80	3.47	106	94
Power 4.2	1.33	1.25	0.86	3.44	106	92
Guardman II	1.44	1.19	0.80	3.43	105	93
Everlast	1.42	1.17	0.82	3.41	105	92
420	1.42	1.18	0.81	3.41	105	93
Vernal (check)	1.45	1.14	0.80	3.39	104	90
HybriForce-420/Wet	1.38	1.17	0.83	3.38	104	90
Oneida VR (check)	1.39	1.18	0.80	3.37	103	93
DKA33-16	1.35	1.14	0.82	3.31	102	91
FSG 406	1.39	1.16	0.76	3.31	102	93
54H91	1.42	1.13	0.72	3.26	100	89
Evermore	1.29	1.18	0.80	3.26	100	95
WL 319HQ	1.33	1.14	0.76	3.23	99	90
6400HT	1.33	1.11	0.73	3.17	97	91
5312 (check)	1.27	1.01	0.73	3.01	92	88
					Ck. Mean	
Trial Mean (T/A)	1.43	1.19	0.80	3.42	3.26	92
P-value (entries)	0.0111	0.0001	0.0001	0.0003		0.2842
5% LSD	0.18	0.14	0.08	0.36		4
CV(%)	10.8	10.0	8.9	9.3		4.2
MCV (%)	13	12	10	11		
LSR (%)	53	35	27	35		
Lattice Efficiency	210%	261%	285%	245%		

**Table 7** Trial sown in New York in Spring 2005  
Ithaca, Tompkins County, Sown May 5, 2005

	2005		2005				
	6-Sep (adj.)	% of Cks.	19-Jul (adj.)	28-Aug (adj.)	Total (adj.)	% of Cks.	
	T/A		- tons per acre dry matter -				
<b>RELEASED CULTIVARS</b>			<b>RELEASED CULTIVARS</b>				
4S419	0.92	130	Genoa	1.90	1.40	3.30	108
Baralfa 32IQ	0.85	119	361 HY	1.92	1.38	3.30	108
BPR 387	0.82	115	BPR 387	1.82	1.45	3.26	106
Guardzman II	0.82	115	4S419	1.84	1.38	3.23	105
6415	0.81	114	Prolific	1.85	1.35	3.21	104
Oneida VR (check)	0.81	114	4R429	1.81	1.40	3.20	104
Milestone	0.80	113	Baralfa 32IQ	1.82	1.34	3.16	103
53Q30	0.78	109	Guardzman II	1.84	1.31	3.15	102
54V46	0.77	108	Vernal (check)	1.85	1.28	3.13	102
5312 (check)	0.76	108	54V46	1.76	1.36	3.13	102
361 HY	0.76	107	53Q30	1.78	1.34	3.12	102
4R429	0.76	107	5312 (check)	1.71	1.34	3.05	99
Oneida Ultra	0.76	107	Oneida VR (check)	1.72	1.31	3.04	99
Guardzman	0.75	106	Milestone	1.68	1.29	2.96	97
Prolific	0.73	103	WL 348AP	1.63	1.24	2.88	94
Genoa	0.68	96	4A421	1.60	1.24	2.85	93
4A421	0.68	96					
Integrity	0.62	88	<b>EXPERIMENTAL STRAINS</b>				
Vernal (check)	0.56	79	4S35	1.69	1.30	2.99	97
			30Q136	1.66	1.13	2.79	91
							Ck. Mean
			Trial Mean (T/A)	1.74	1.30	3.04	3.07
			P-value (entries)	0.0263	0.0581	0.0145	
			5% LSD	0.25	0.20	0.39	
			CV(%)	8.7	9.2	7.8	
			MCV (%)	14	15	13	
			LSR (%)	56	64	63	
			Lattice Efficiency	233%	163%	218%	
<b>EXPERIMENTAL STRAINS</b>							
Double Eagle	0.92	129					
42A114	0.82	116					
FG42T129	0.82	115					
Hi Yelder	0.81	114					
4S35	0.80	113					
AA110E	0.80	113					
Meadowlark	0.76	107					
AA107E	0.75	106					
AA108E	0.73	102					
AA104E	0.71	100					
30Q136	0.71	100					
AA106E	0.69	97					
		Ck. Mean					
Trial Mean (T/A)	0.73	0.71					
P-value (entries)	0.0001						
5% LSD	0.18						
CV(%)	19.9						
MCV (%)	10						
LSR (%)	39						
Lattice Efficiency	141%						

Trial was cut off on July 22, 2005

**Table 8**  
**Harvest by Harvest Summary**

**Alfalfa Trials to Test Insect Resistant Cultivars -**

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

**No- Insecticide Alfalfa Trial Sown May 6, 2002**

Entry	2005			2004	2003	3-Yr.		4-Yr. Avg.	% Stand 19-Oct-05	
	15-Jun	29-Jul	6-Oct	Total Season	Total Season	Total Season	Total	% of Cks.		PLH Damage
--- tons per acre dry matter ---										
54H91	1.68	1.36	0.31	3.35	5.80	7.09	16.47	108	1.8	74
5312 (check)	2.03	1.58	0.47	4.08	5.74	6.07	16.19	106	3.5	78
GPVL44	1.84	1.45	0.33	3.62	6.03	5.78	15.88	104	3.6	81
Pegasus	1.42	1.33	0.34	3.10	5.43	6.65	15.85	104	2.2	71
Vernal (check)	1.89	1.41	0.47	3.77	5.39	5.74	15.07	99	3.4	79
CK2000	1.62	1.34	0.35	3.31	5.52	5.81	14.76	96	3.5	71
Oneida VR (check)	1.88	1.55	0.43	3.85	5.38	5.45	14.64	96	4.1	80
Trial Mean	1.74	1.40	0.34	3.48	5.58	6.26	15.51	Ck.Mean		76
P-value	0.0552	0.0700	0.0001	0.0283	0.0714	0.0001	0.0127			0.3400
LSD(.05)	0.35	0.25	0.07	0.60	0.60	0.55	1.74			10
CV(%)	14.1	12.4	15.2	12.0	7.5	7.7	7.8			8.9

In 2004 and 2005, analyzed replications 1,4,5,6.

**No-Insecticide Alfalfa Trial Sown April 30, 2003**

Entry	2005		2004	2-Yr.		3-Yr. Avg.	% Stand 26-Apr-05
	13-Jun	25-Jul	Total Season	Total Season	Total	% of Cks.	
--- tons per acre dry matter ---							
WL 346LH	2.08	1.91	3.99	5.25	9.24	107	94
4375LH	1.97	1.92	3.89	5.28	9.17	106	92
5312 (check)	2.00	1.91	3.91	4.97	8.88	103	95
54H91	1.88	1.85	3.73	5.08	8.81	102	93
Oneida VR (check)	1.94	1.79	3.73	5.07	8.80	102	95
Vernal (check)	1.73	1.69	3.42	4.83	8.25	95	92
Trial Mean	1.88	1.80	3.68	4.98		Ck. Mean 8.64	92
P-value	0.0002	0.0001	0.0001	0.0001			0.0001
LSD(.05)	0.21	0.18	0.37	0.39			1.8
CV(%)	9.5	8.8	8.8	6.8			1.7

**No Insecticide Alfalfa Trial - Sown April 29, 2005**

Entry	2005			PLH Count 7/21/05
	27-Jul (adj.)	% of Cks.	PLH Damage	
T/A				
54H91	1.09	139	2.2	10
6325	1.08	139	4.3	27
WL 347LH	1.06	135	3.2	24
WL 345LH	1.01	130	3.0	22
5312 (check)	0.84	108	5.0	39
Oneida VR (check)	0.80	102	5.0	39
Vernal (check)	0.70	89	5.0	32
Trial Mean (T/A)	0.95	Ck. Mean 0.78	3.7	27
P-value	0.0001		0.0001	0.0001
5% LSD	0.18		0.6	12
CV(%)	16.0		15.0	28.6

PLH counts from Reps 1,2,3,5.

\*No. PLH per 5 sweeps per plot averaged over 4 plots

**Table 9:**  
**Harvest by Harvest Summary**

**New York - Central**

**Page 12**

**Red Clover Trial, Sown April 29, 2003**

Cultivar	2005		2004	2-Yr.		% Stand 29-Jul-05	
	13-Jun	15-Jul	Total Season	Total Season	Total		% of Checks
	--- tons per acre dry matter ---						
Dominion (RC 9804G)	2.12	1.10	3.22	5.52	8.74	108	90
Raven (RC 9402)	1.93	1.02	2.95	5.66	8.61	107	90
Marathon (check)	1.90	0.98	2.88	5.56	8.44	104	92
Cinnamon Plus	2.05	0.99	3.04	5.39	8.43	104	89
Freedom!	1.86	1.06	2.92	5.51	8.42	104	90
RC9101	1.94	1.06	3.00	5.40	8.40	104	89
FSG-9601	1.65	0.97	2.62	5.49	8.11	100	89
Arlington (check)	1.61	0.92	2.52	5.18	7.71	95	89
Trial Mean	1.78	0.97	2.76	5.37	8.13	Ck. Mean 8.08	90
P-value	0.0083	0.0218	0.0103	0.0001	0.0001		0.0001
LSD(.05)	0.21	0.08	0.28	0.26	0.39		1.6
CV(%)	10.2	7.5	8.7	4.2	4.2		1.6

**Red Clover Trial, Sown May 7, 2004**

Cultivar	2005			Total	% of	% Stand
	7-Jun	18-Jul	12-Sep	Season	Checks	26-Apr-05
	---- tons/acre dry matter ----					
Duration	2.42	1.41	0.87	4.70	108	100
Rocket	2.40	1.39	0.75	4.53	104	100
Marathon (check)	2.37	1.30	0.69	4.37	101	100
Arlington (check)	2.20	1.37	0.73	4.30	99	98
CW 10002	2.22	1.27	0.79	4.28	99	98
WVPB-RC-NT-KY2	2.04	1.37	0.68	4.08	94	99
Trial Mean	2.28	1.35	0.75	4.38	Ck. Mean 4.34	99
P-value	0.2802	0.0263	0.4608	0.2077		0.1003
LSD(.05)	0.38	0.09	0.22	0.52		2
CV(%)	11.2	4.7	19.2	7.9		1.5

In 2005, analyzed replicates 2,4,5,6. Drought conditions lead to variability in forage growth.

**New York - Eastern; Cobleskill, Schoharie Co.**  
**Birdsfoot Trefoil + Timothy Trial, Sown April 24, 2002**

Cultivar	2005				2004	2003	3-Yr.		
	20-May	24-Jun	27-Jul	9-Sep	Total Season	Total Season	Total Season	Total	% of Norcen
	--- tons/acre dry matter ---								
Pardee	0.39	1.67	0.96	0.25	3.27	4.83	5.29	13.39	110
Viking	0.32	1.65	0.88	0.18	3.02	4.58	5.21	12.81	105
Norcen	0.34	1.46	0.60	0.12	2.52	4.21	5.47	12.20	100
Exact	0.33	1.42	0.70	0.10	2.55	3.93	5.40	11.88	97
Leo	0.33	1.48	0.69	0.10	2.60	4.14	5.13	11.88	97
Trial Mean	0.34	1.53	0.77	0.15	2.79	4.34	5.30		
P-value	0.0976	0.0174	0.0003	0.0005	0.0001	0.0008	0.6074		
LSD(.05)	0.06	0.18	0.15	0.07	0.30	0.39	0.50		
CV(%)	13.1	8.6	14.5	32.8	8.1	6.8	7.0		

**TABLE 10: Perennial Forage Grass Variety Yield Trials in New York**  
**(Yield - tons per acre dry matter) Ithaca, Tompkins Co., Sown 2002, 2003, 2004**

\*, \*\* = significant differences among varieties at P<0.05 and P<0.01, respectively; ns = no significant differences among varieties.  
 Heading date is date when 5 heads in a 3.5 by 16 foot plot were visible.

<b>Perennial Ryegrass and Festulolium</b>													
<b>Sown May 6, 2002</b>													
<b>Variety</b>	<b>2005</b>							<b>2004</b>			<b>2003</b>		<b>3-Yr. Total</b>
	<b>27-May</b>	<b>24-Jun</b>	<b>4-Aug</b>	<b>28-Sep</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>Heading Date</b>	
	--- tons per acre dry matter ---							T/A			T/A		T/A
Duo (festulolium)	0.94	0.86	0.48	0.35	2.63	78	27-May	5.07	86	18-May	6.75	26-May	14.44
Spring Green (festulolium)	1.07	0.98	0.51	0.41	2.97	70	30-May	4.22	85	19-May	6.82	26-May	14.01
Garibaldi	0.69	1.11	0.59	0.40	2.79	70	3-Jun	4.40	84	23-May	6.42	2-Jun	13.62
Bastion	0.85	0.71	0.53	0.39	2.49	71	24-May	4.25	85	15-May	6.00	22-May	12.74
Citadel	0.56	0.96	0.57	0.42	2.50	71	31-May	4.36	84	23-May	5.79	26-May	12.65
Quartet	0.32	0.83	0.28	0.33	1.75	65	6-Jun	3.34	76	26-May	5.68	6-Jun	10.78
BAR Lp 9132	0.19	0.65	0.47	0.34	1.65	79	13-Jun	3.22	85	9-Jun	4.88	11-Jun	9.75
Trial Mean	0.66	0.87	0.49	0.38	2.40	72		4.12	84		6.05		
F-entries	19.57 **	8.23 **	45.15 **	0.78 ns	36.90 **	3.46 **		11.54 **	2.14 ns		18.08 **		
LSD(.05)	0.21	0.16	0.04	0.12	0.24	7		0.55	7		0.47		
CV(%)	22.2	12.7	6.3	21.7	6.9	7.1		9.2	5.5		5.3		

<b>Perennial Ryegrass and Festulolium</b>													
<b>Sown May 9, 2003</b>													
<b>Variety</b>	<b>2005</b>							<b>2004</b>			<b>2-Yr. Total</b>		
	<b>26-May</b>	<b>27-Jun</b>	<b>3-Aug</b>	<b>4-Oct</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 7-Oct</b>	<b>Heading Date</b>			
	--- tons per acre dry matter ---							T/A			T/A		
Spring Green (festulolium)	1.40	0.87	0.70	0.53	3.49	70	25-May	5.70	78	16-May	9.20		
Remington	0.78	1.14	0.72	0.55	3.19	81	3-Jun	5.32	89	25-May	8.51		
Bastion	1.27	0.54	0.85	0.52	3.17	71	19-May	4.70	88	14-May	7.87		
PSGG9-04	1.14	0.75	0.65	0.40	2.94	65	22-May	4.85	78	16-May	7.80		
Citadel	0.86	0.81	0.79	0.53	2.99	66	30-May	4.66	85	18-May	7.65		
Paddock	0.46	0.97	0.62	0.51	2.55	75	6-Jun	3.81	81	27-May	6.36		
Trial Mean	0.96	0.84	0.65	0.46	2.92	62		4.66	73				
F-entries	24.53 **	23.60 **	10.97 **	16.63 **	18.22 **	251.38 **		22.96 **	222.96 **				
LSD(.05)	0.20	0.11	0.17	0.09	0.32	5		0.47	6				
CV(%)	13.8	9.0	17.5	13.4	7.5	5.2		6.8	5.2				

<b>Perennial Ryegrass</b>										
<b>Sown May 18, 2004</b>										
<b>Variety</b>	<b>2005</b>				<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>			
	<b>26-May</b>	<b>24-Jun</b>	<b>5-Aug</b>	<b>3-Oct</b>						
	--- tons per acre dry matter ---									
Modane	0.48	1.24	0.85	1.02	3.59	86	3-Jun			
Bastian	0.95	0.79	0.83	0.90	3.47	84	22-May			
Eurostar	0.64	0.97	0.89	0.85	3.35	89	3-Jun			
Citadel	0.53	1.04	0.84	0.90	3.31	85	31-May			
Bargala	0.60	1.18	0.68	0.82	3.28	89	3-Jun			
Grand Daddy	0.82	0.78	0.76	0.85	3.21	88	27-May			
Proton	0.44	1.09	0.80	0.85	3.18	88	6-Jun			
Barsprinter	0.47	1.20	0.59	0.76	3.01	90	3-Jun			
RESPECT	0.50	0.92	0.63	0.81	2.88	89	27-May			
Trial Mean	0.60	1.02	0.76	0.86	3.25	87				
F-entries	7.64 **	25.58 **	7.45 **	1.57 ns	2.66 *	1.93 ns				
LSD(.05)	0.18	0.10	0.11	0.17	0.39	4				
CV(%)	21.0	6.6	10.3	13.7	8.3	3.3				

<b>Tall Fescue</b>		<b>2005</b>							<b>2004</b>			<b>2003</b>		<b>3-Yr.</b>
<b>Sown May 6, 2002</b>		<b>27-May</b>	<b>24-Jun</b>	<b>4-Aug</b>	<b>28-Sep</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>Heading Date</b>	<b>Total</b>
		--- tons per acre dry matter ---							T/A			T/A		T/A
Hykor (festulolium)	1.05	1.08	1.60	1.33	5.06	70	24-May	6.17	74	14-May	8.05	21-May	19.27	
Select	0.92	1.08	1.41	1.54	4.96	74	27-May	5.95	84	16-May	8.03	22-May	18.94	
Bull	0.95	1.05	1.30	1.49	4.78	70	24-May	6.21	84	14-May	7.64	20-May	18.63	
Kora	0.98	1.03	1.37	1.13	4.52	70	25-May	5.73	78	17-May	7.69	22-May	17.94	
Trial Mean	0.97	1.01	1.33	1.23	4.54	69		5.73	79		7.64			
F-entries	7.90 **	26.65 **	34.38 **	66.09 **	69.65 **	8.48 **		25.27 **	16.38 **		13.63 **			
LSD(.05)	0.11	0.09	0.14	0.15	0.27	6		0.45	4		0.55			
CV(%)	7.8	5.7	7.2	8.1	3.9	5.8		5.2	3.2		4.8			

<b>Tall Fescue</b>		<b>2005</b>							<b>2004</b>			<b>2-Yr.</b>
<b>Sown May 9, 2003</b>		<b>26-May</b>	<b>27-Jun</b>	<b>3-Aug</b>	<b>4-Oct</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 7-Oct</b>	<b>Heading Date</b>	<b>Total</b>
		--- tons per acre dry matter ---							T/A			T/A
Enhance	0.92	1.11	1.24	1.35	4.62	78	25-May	6.74	84	16-May		11.36
Bull	0.98	1.01	1.25	1.38	4.63	78	23-May	6.70	85	14-May		11.32
Select	1.02	1.08	1.29	1.26	4.64	75	23-May	6.55	88	16-May		11.19
Montendre	0.67	0.97	1.14	1.24	4.02	76	27-May	5.69	83	17-May		9.71
Trial Mean	0.89	1.04	1.26	1.30	4.49	76		6.45	85			
F-entries	11.23 **	1.74 ns	2.26 ns	2.77 ns	4.61 *	1.24 ns		14.10 **	1.41 ns			
LSD(.05)	0.13	0.13	0.16	0.11	0.38	6		0.36	5			
CV(%)	9.5	8.0	8.4	5.6	5.5	5		3.6	3.8			

<b>Reed canarygrass</b>		<b>2005</b>							<b>2004</b>			<b>2003</b>		<b>3-Yr.</b>
<b>Sown May 24, 2002</b>		<b>27-May</b>	<b>28-Jun</b>	<b>4-Aug</b>	<b>28-Sep</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>Heading Date</b>	<b>Total</b>
		--- tons per acre dry matter ---							T/A			T/A		T/A
Vantage	0.74	1.42	1.02	1.07	4.25	88	3-Jun	6.26	90	23-May	6.97	30-May	17.48	
Palaton	0.80	1.31	0.83	0.99	3.93	86	1-Jun	5.78	90	21-May	6.53	30-May	16.24	
Chiefton	0.74	1.32	0.89	1.07	4.02	84	31-May	5.82	90	21-May	6.29	30-May	16.13	
Venture	0.80	1.25	0.88	1.04	3.97	88	31-May	5.64	90	21-May	6.30	30-May	15.91	
Trial Mean	0.77	1.32	0.91	1.04	4.04	86		5.88			6.52			
F-entries	0.45 ns	3.15 ns	7.58 **	1.14 ns	2.33 ns	1.13 ns		11.57 **			4.97 *			
LSD(.05)	0.15	0.12	0.09	0.12	0.30	5		0.25			0.44			
CV(%)	12.5	5.8	6.4	7.0	4.6	3.9		2.7			4.4			

<b>Reed Canarygrass</b>		<b>2005</b>							<b>2004</b>			<b>2-Yr.</b>
<b>Sown May 9, 2003</b>		<b>26-May</b>	<b>27-Jun</b>	<b>3-Aug</b>	<b>4-Oct</b>	<b>Total Season</b>	<b>% Stand 6-Oct</b>	<b>Heading Date</b>	<b>Total Season</b>	<b>% Stand 7-Oct</b>	<b>Heading Date</b>	<b>Total</b>
		--- tons per acre dry matter ---							T/A			T/A
Palaton	0.73	1.12	0.60	0.90	3.34	81	31-May	5.62	91	21-May		8.96
Marathon	0.69	1.12	0.59	0.85	3.26	84	31-May	5.35	91	21-May		8.61
Trial Mean	0.71	1.12	0.60	0.87	3.3	83		5.48	91			

**Orchardgrass**

Sown May 6, 2002

Variety	2005							2004			2003		3-Yr. Total
	27-May	24-Jun	4-Aug	28-Sep	Total Season	% Stand 6-Oct	Heading Date	Total Season	% Stand 6-Oct	Heading Date	Total Season	Heading Date	
	--- tons per acre dry matter ---							T/A			T/A		T/A
Benchmark Plus (OG9705)	1.44	0.93	0.87	0.88	4.12	74	18-May	5.27	80	12-May	6.65	14-May	16.04
Extend	1.66	0.91	1.04	0.81	4.42	70	24-May	4.82	82	14-May	6.52	20-May	15.75
Stampede	1.57	0.89	0.84	0.79	4.09	70	20-May	4.74	83	12-May	6.46	16-May	15.30
Baridana	1.51	0.84	0.88	0.78	4.01	73	24-May	4.49	82	13-May	6.12	20-May	14.62
Potomac	1.52	0.77	0.72	0.73	3.74	76	18-May	4.47	87	11-May	6.30	14-May	14.51
Intensiv	1.24	0.89	0.95	0.60	3.67	69	24-May	4.67	80	18-May	5.95	26-May	14.29
BAR Dgl BTR 9G	1.49	0.76	0.69	0.64	3.59	73	18-May	4.42	85	13-May	6.16	14-May	14.16
Trial Mean	1.50	0.85	0.86	0.75	3.97	72		4.75	83		6.33		
F-entries	5.76 **	4.85 **	2.71 *	3.33*	8.53 **	3.03 *		2.01 ns	1.70 ns		1.48 ns		
LSD(.05)	0.15	0.09	0.20	0.15	0.28	4		0.66	6		0.57		
CV(%)	6.9	7.0	16.1	13.3	4.8	3.8		7.9	4.0		6.2		

\*deleted fourth replication.

**Orchardgrass**

Sown May 9, 2003

Variety	2005							2004			2-Yr. Total
	28-May	27-Jun	3-Aug	4-Oct	Total Season	% Stand 6-Oct	Heading Date	Total Season	% Stand 7-Oct	Heading Date	
	--- tons per acre dry matter ---							T/A			T/A
Stampede	1.58	1.03	1.20	0.85	4.66	74	16-May	5.33	83	12-May	9.99
Bounty (OG9701)	1.65	1.02	1.18	0.88	4.73	75	12-May	5.18	81	11-May	9.90
Extend	1.47	1.01	1.13	0.83	4.45	75	19-May	5.33	81	14-May	9.78
Baridana	1.58	1.04	1.24	0.76	4.63	73	19-May	4.77	83	13-May	9.40
Potomac	1.71	0.88	0.98	0.73	4.30	80	13-May	4.90	83	11-May	9.20
Haymaster (OG9704)	1.56	1.01	1.07	0.62	4.26	74	19-May	4.46	83	14-May	8.72
Trial Mean	1.59	1.00	1.13	0.78	4.50	75		4.99	82		
F-entries	5.41 **	6.91 **	3.00 *	4.42 *	4.94 **	1.16 ns		6.76 **	0.25 ns		
LSD(.05)	0.11	0.07	0.17	0.14	0.27	7		0.40	4		
CV(%)	4.5	4.5	10.0	12.0	4.0	6.5		5.3	3.1		

**Orchardgrass**

2005

Variety	2005						
	27-May	24-Jun	5-Aug	3-Oct	Total Season	% Stand 6-Oct	Heading Date
	--- tons per acre dry matter ---						
Stampede	1.15	1.08	1.37	1.43	5.03	88	20-May
Command	1.26	1.10	1.28	1.10	4.74	88	23-May
Intensiv	1.01	1.12	1.24	1.11	4.48	79	25-May
Baridana	1.03	1.05	1.23	1.14	4.45	89	20-May
LG 31	0.62	1.12	1.28	1.36	4.36	86	30-May
Impuls	0.89	0.97	1.14	1.03	4.03	83	24-May
Trial Mean	0.99	1.07	1.25	1.20	4.52	85	
F-entries	33.07 **	3.36 *	1.07 ns	11.88 **	9.85 **	9.26 **	
LSD(.05)	0.12	0.10	0.22	0.14	0.33	4	
CV(%)	7.8	6.0	11.7	7.7	4.8	3.0	

**Timothy**

Sown May 24, 2002

Variety	2005							2004			2003		3-Yr. Total
	27-May	28-Jun	4-Aug	28-Sep	Total Season	% Stand 6-Oct	Heading Date	Total Season	% Stand 6-Oct	Heading Date	Total Season	Heading Date	
	--- tons per acre dry matter ---							T/A			T/A		T/A
Summit	1.50	0.53	0.60	0.29	2.92	83	27-May	5.08	90	20-May	6.79	29-May	14.80
Express	1.34	0.67	0.47	0.18	2.67	85	2-Jun	5.03	92	27-May	6.35	10-Jun	14.04
Barmidi	0.82	1.28	0.29	0.16	2.55	74	10-Jun	4.20	86	11-Jun	6.06	19-Jun	12.82
Chazy	0.98	0.80	0.43	0.21	2.42	85	30-May	4.15	90	21-May	5.92	2-Jun	12.49
Climax	0.74	1.02	0.33	0.20	2.30	84	27-May	3.92	88	22-May	5.73	16-Jun	11.95
Trial Mean	1.02	0.90	0.41	0.21	2.53	82		4.36	88		6.07		
F-entries	77.50 **	118.03 **	11.12 **	8.49 **	8.19 **	2.87 ns		20.84 **	2.31 ns		30.08 **		
LSD(.05)	0.11	0.08	0.11	0.05	0.25	8		0.37	5		0.24		
CV(%)	7.3	5.7	17.3	14.8	6.5	6.2		5.6	3.7		2.7		

**Timothy**

Sown May 9, 2003

Variety	2005							2004			2-Yr. Total
	26-May	27-Jun	3-Aug	4-Oct	Total Season	% Stand 6-Oct	Heading Date	Total Season	% Stand 7-Oct	Heading Date	
	--- tons per acre dry matter ---							T/A			T/A
Derby (TM9901)	1.60	0.72	0.70	0.46	3.48	74	25-May	6.04	80	21-May	9.52
Crest (TM0102)	1.60	0.99	0.51	0.40	3.50	79	1-Jun	5.96	79	27-May	9.45
Summit	1.56	0.62	0.74	0.51	3.44	74	25-May	5.54	78	20-May	8.98
AC Opal	1.35	0.92	0.54	0.36	3.17	75	7-Jun	5.48	80	7-Jun	8.66
Comer	1.37	0.81	0.48	0.38	3.04	70	3-Jun	5.51	75	31-May	8.55
AC Alliance	1.47	0.83	0.65	0.38	3.32	78	30-May	5.22	83	25-May	8.54
Express	1.32	0.87	0.44	0.35	2.98	78	1-Jun	5.47	83	28-May	8.45
Chazy	1.31	0.85	0.55	0.37	3.08	79	30-May	5.30	78	21-May	8.38
Climax	1.07	0.79	0.54	0.33	2.73	75	31-May	4.86	78	27-May	7.59
Tenho	0.93	1.18	0.48	0.37	2.97	78	7-Jun	4.20	81	7-Jun	7.17
Trial Mean	1.36	0.86	0.56	0.39	3.17	76		5.36	79		
F-entries	12.54 **	12.81 **	4.81 **	4.41 **	4.41 **	2.80 *		7.77 **	2.02 ns		
LSD(.05)	0.18	0.12	0.13	0.07	0.35	5		0.55	5		
CV(%)	9.2	10.0	16.1	13.0	7.7	4.4		7.1	4.3		

**Timothy**

2005

Variety	2005						
	27-May	24-Jun	5-Aug	3-Oct	Total Season	% Stand 6-Oct	Heading Date
	--- tons per acre dry matter ---						
Climax	0.95	1.32	0.71	0.79	3.77	88	3-Jun
Monza	1.31	0.74	0.80	0.91	3.76	86	27-May
Moverdi	0.99	1.24	0.73	0.80	3.76	80	10-Jun
Chazy	0.80	1.38	0.65	0.82	3.65	86	30-May
Trial Mean	1.01	1.17	0.72	0.83	3.74	85	
F-entries	14.47 **	40.74 **	0.85 ns	1.77 ns	0.14 ns	5.50 *	
LSD(.05)	0.18	0.15	0.21	0.13	0.49	5	
CV(%)	11.1	7.8	18.0	10.0	8.2	3.4	

**Bromegrass**

Sown May 24, 2002

Variety	2005							2004			2003		3-Yr. Total
	27-May	28-Jun	4-Aug	28-Sep	Total Season	% Stand 6-Oct	Heading Date	Total Season	% Stand 6-Oct	Heading Date	Total Season	Heading Date	
	--- tons per acre dry matter ---							T/A			T/A		T/A
York	1.13	0.68	0.55	0.28	2.65	60	23-May	3.94	71	14-May	6.73	21-May	13.31
Peak	1.15	0.67	0.60	0.27	2.69	58	23-May	3.56	75	14-May	6.32	20-May	12.57
Bravo	0.90	0.59	0.50	0.27	2.25	53	23-May	3.56	65	16-May	6.45	21-May	12.27



**Table 11: 2004 Forage Quality Predictions by NIRS for Grass Varieties planted in NY 2002 Trials at Ithaca, Tompkins Co. Page 17**

NDF = neutral detergent fiber, IVDDM = in vitro digestible dry matter (48 hour digestion)

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.

**Perennial Ryegrass and Festulolium (F)**

Variety	Forage Quality at Boot Stage			Forage Quality at First Harvest in 2004					
	Date at Boot Stage	% PROTEIN	% NDF	% IVDDM	Date at Harvest	Maturity Score	% PROTEIN	% NDF	% IVDDM
Duo (F)	18-May	15.1	51.1	93.2	24-May	R 1.5	12.2	57.8	87.3
Spring Green (F)	19-May	14.5	51.9	92.9	24-May	R 1.8	13.5	56.8	89.1
Garibaldi	23-May	13.7	51.0	92.1	24-May	R 1.0	14.0	52.4	91.4
Bastion	15-May	16.5	50.5	93.7	24-May	R 2.0	12.6	57.5	87.5
Citadel	23-May	13.6	48.6	92.2	24-May	R 1.3	13.4	48.0	92.3
Quartet	26-May	13.8	47.6	92.6	24-May	T 4.0	14.9	47.7	93.4
BAR Lp 9132	9-Jun	10.5	43.8	92.9	24-May	T 2.0	15.7	45.7	93.6

**Tall Fescue and Festulolium (F)**

Hykor (F)	14-May	17.9	54.2	88.7	20-May	R 1.0	14.1	55.7	86.3
Select	16-May	16.4	58.9	85.7	20-May	R 1.0	13.8	56.2	85.5
Bull	14-May	17.2	58.2	85.9	20-May	R 1.8	13.6	59.1	82.9
Kora	17-May	15.5	57.0	88.0	20-May	R 0.5	14.0	55.6	87.9

**Reed canarygrass**

Vantage	23-May	14.8	68.9	77.0	25-May	R 1.0	15.5	67.9	77.9
Palaton	21-May	16.1	68.3	79.5	25-May	R 1.5	14.7	69.0	77.5
Chiefton	21-May	16.9	66.9	81.2	25-May	R 0.5	14.9	69.3	76.8
Venture	21-May	16.7	67.3	80.3	25-May	R 1.0	14.9	68.8	76.7

**Orchardgrass**

Benchmark Plus (O)	12-May	16.4	65.6	83.9	20-May	R 3.0	12.5	66.3	81.5
Extend	14-May	17.1	60.5	89.8	20-May	R 2.0	13.8	63.8	86.0
Stampede	12-May	16.5	61.5	87.0	20-May	R 2.3	13.0	64.0	84.1
Baridana	13-May	17.2	60.8	87.4	20-May	R 1.5	13.4	62.8	85.9
Potomac	11-May	16.8	64.7	84.7	20-May	R 3.0	12.7	66.9	81.2
Intensiv	18-May	13.2	59.9	88.6	20-May	R 0.5	12.4	59.6	86.8
BAR Dgl BTR 9G	13-May	16.7	62.2	87.6	20-May	R 2.5	12.6	67.2	81.9

**Timothy**

Summit	20-May	13.8	63.2	83.8	27-May	R 2.0	12.1	67.8	77.9
Express	27-May	12.2	65.6	82.0	27-May	R 0.5	12.9	67.2	81.1
Barmidi	11-Jun	9.9	67.2	78.5	27-May	T 2.0	14.6	60.9	85.3
Chazy	21-May	14.8	62.2	85.5	27-May	R 1.0	12.7	65.8	79.8
Climax	28-May	13.1	64.4	83.3	27-May	T 3.0	14.8	60.9	85.6

**Bromegrass**

York	14-May	19.5	62.4	89.1	25-May	R 3.0	13.8	72.3	77.8
Peak	14-May	19.6	61.0	90.2	25-May	R 3.0	13.7	72.4	76.8
Bravo	16-May	18.9	64.2	88.7	25-May	R 2.0	15.1	69.3	81.3
Saratoga	16-May	18.3	63.7	89.2	25-May	R 2.5	13.8	71.9	79.5

**Table 12: 2004 DATA for trial planted in 2003 -DATA FROM 2005 AVAILABLE IN DECEMBER 2005 at web site. Page 18**

NDF = neutral detergent fiber, IVDDM = in vitro digestible dry matter (48 hour digestion)

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.

	Forage Quality at Boot Stage				Forage Quality at First Harvest in 2004				
	Date at Boot Stage	% PROTEIN	% NDF	% IVDDM	Date at Harvest	Maturity Score	% PROTEIN	% NDF	% IVDDM
<b>Perennial Ryegrass and Festulolium (F)</b>									
Spring Green (F)	16-May	16.6	53.9	93.2	25-May	R 2.0	12.3	61.7	85.2
Remington	25-May	13.4	57.4	88.3	25-May	R 0.0	14.2	56.0	89.7
Bastion	14-May	16.6	49.6	93.9	25-May	R 2.0	12.6	61.1	84.3
PSGG9-04	16-May	15.8	55.7	91.6	25-May	R 2.0	12.1	64.3	83.4
Citadel	18-May	15.8	50.6	93.8	25-May	R 2.0	13.8	55.3	89.7
Paddock	27-May	14.6	51.2	92.4	25-May	T 4.0	15.6	52.1	90.3
<b>Tall Fescue</b>									
Enhance	16-May	17.8	57.7	86.2	20-May	R 1.0	15.9	57.4	84.3
Bull	14-May	17.3	57.8	85.5	20-May	R 2.0	14.2	60.8	81.0
Select	16-May	17.7	57.4	85.7	20-May	R 1.0	14.3	58.9	83.1
Montendre	17-May	17.7	55.9	87.1	20-May	R 0.0	16.8	57.1	85.6
<b>Reed Canarygrass</b>									
Palaton	21-May	15.5	67.6	78.0	25-May	R 1.0	14.4	70.7	75.1
Marathon	21-May	15.1	68.4	77.5	25-May	R 1.3	13.8	70.6	74.3
<b>Orchardgrass</b>									
Stampede	12-May	17.1	63.5	84.6	20-May	R 2.3	14.5	66.8	80.6
Bounty (OG9701)	11-May	16.3	63.0	85.5	20-May	R 3.0	14.2	66.3	79.7
Extend	14-May	17.1	63.2	86.9	20-May	R 1.5	14.5	65.2	83.6
Baridana	13-May	17.4	62.7	85.5	20-May	R 1.3	15.0	64.8	82.6
Potomac	11-May	16.4	64.5	83.9	20-May	R 2.5	13.6	67.6	78.9
Haymaster (OG9704)	14-May	18.1	60.7	87.0	20-May	R 1.5	14.0	65.4	81.6
<b>Timothy</b>									
Derby (TM9901)	21-May	14.2	63.3	84.8	27-May	R 2.5	11.4	67.3	78.4
Crest (TM0102)	27-May	12.1	65.6	82.1	27-May	R 0.5	12.8	65.3	83.0
Summit	20-May	13.5	64.3	84.0	27-May	R 2.0	11.3	68.1	77.8
AC Opal	7-Jun	9.4	69.0	77.9	27-May	T 3.0	13.9	63.7	84.0
Comer	31-May	10.6	65.6	80.7	27-May	R 0.0	13.0	65.1	82.6
AC Alliance	25-May	13.0	66.1	82.3	27-May	R 0.5	13.2	64.6	83.6
Express	28-May	11.7	65.5	81.3	27-May	R 0.0	13.6	65.5	82.9
Chazy	21-May	16.0	59.3	88.1	27-May	R 1.5	12.2	64.8	81.9
Climax	21-May	16.5	58.8	88.7	27-May	R 1.0	13.3	64.4	82.5
Tenho	7-Jun	9.6	67.1	79.9	27-May	T 3.0	15.1	61.2	86.7