

NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS

SUMMARY FOR 2021 – SEASON TOTALS



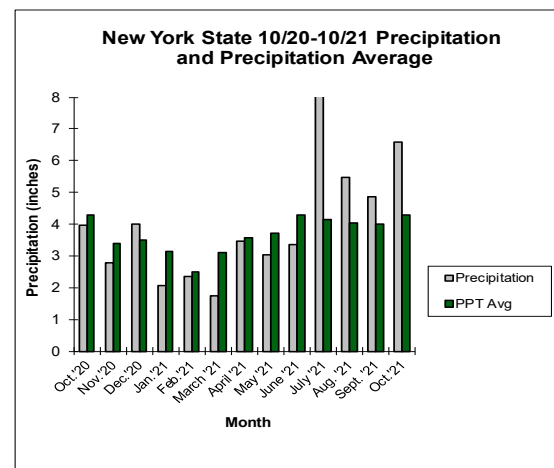
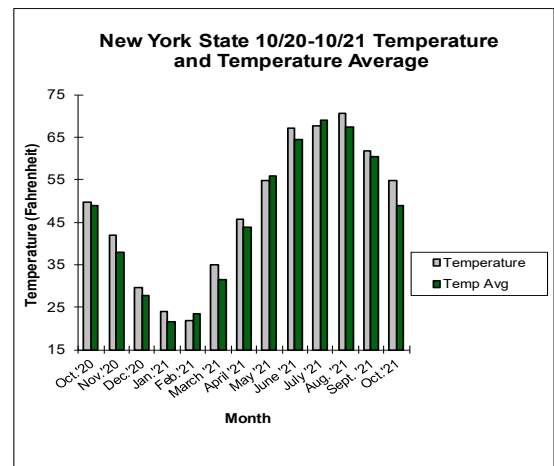
J. Hansen*, V. Moore, J. Chavez, J. Crawford, J. Schiller, R. Crawford, School of Integrative Plant Science, Plant Breeding and Genetics Section, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY
<https://blogs.cornell.edu/varietytrials/forage/> Photo: Third Production Year Alfalfa Trial SUNY Cobleskill, Eastern NY.

Introduction Forage variety total season yields from New York in the 2021 growing season are in this report. Forage yield trials are planted and harvested annually at the Cornell University Agricultural Experiment Station in Ithaca and at other locations in New York State. Funding for these trials is from Cornell University Agricultural Experiment Station and from the companies that submitted the varieties/cultivars in the trials. Most perennial forage trials are managed for four years; seeding year and three production years. For 2021, Cornell reactivated essential research in time to manage and harvest perennial forage trials.

Alfalfa yields for 2021 averaged 4.7 tons per acre dry matter (0.7 tons more than in 2020), red clover yields (first and second production year trials) averaged 3.3 tons per acre dry matter (0.6 tons per acre more than in 2020), and perennial forage grass yields averaged 5.1 tons per acre dry matter (2.7 tons per acre more than in 2020).

Cultivar/Variety Selection

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



New York State 10/20 to 10/21 temperature and precipitation, avg. from 1991 to 2020. Weather data from the Northeast Regional Climate Center at Cornell U.
<http://www.nrcc.cornell.edu/regional/tables/tables.html>.

Weather and the 2021 Season. Trials planted in 2018, 2019 and 2020 successfully overwintered as noted in spring 2021. New alfalfa plot seedlings were planted in mid-May rather than in late-April/early-May due to above average rainfall and below average temperatures this spring. Following the summer of 2020 when it was quite dry and warm, the summer of 2021 was quite rainy and warm. From April 2021 to October 2021, the average precipitation per month was 5.4 inches. From April 2021 to October 2021, the average temperature was 2 degrees F over the 30-year normal (1991-2020). June, August and October were all above average for temperature. The trial check cultivar 'Vernal' had major stand reduction in 2021, due to low disease resistance in this cultivar. Some COVID-19 restrictions remained in place for 2021.

Alfalfa (Tables 1 and 2, pages 3-6) varieties for New York usually need to have resistance (R) or high resistance (HR) to four diseases (bacterial wilt, Verticillium wilt, anthracnose, Phytophthora root rot) and fall dormancy rating should be 2, 3, or 4. Varieties with higher fall dormancy ratings will produce more forage in the fall. Varieties that have fall dormancy ratings higher than 4 may have unacceptable winter-hardiness for New York, particularly in Northern New York.

In May 2021, alfalfa and other forage trials were planted at Ithaca in Southern Tier NY. The alfalfa trials established well but then the plants were struggling the remainder of the growing season due to excessive rains. We expect to harvest these trials from 2022 to 2024. A limited number of potato leafhopper (PLH) resistant alfalfa varieties are tested in trials that are not sprayed with insecticide (page 5).

Red Clover and Birdsfoot Trefoil (Table 3, page 7) 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 and the clover root borer are destructive pests on clover, eating the roots and destroying the plants in the later production years. Birdsfoot trefoil is a legume that tolerates soils that alfalfa will not be productive on. Birdsfoot trefoil should always be planted in combination with other forages. Also, birdsfoot trefoil does not tolerate low cutting heights, so it is advisable to leave 5+ inches of stubble in the field.

Commercial entry birdsfoot trefoil variety trials were not harvested in 2021.

Grass yield (Tables 4, 5, and 6, pages 8-13) trials were fertilized with 315 lb/A ammonium sulfate in early April and after first, second and third harvests. Forage grass trials were harvested three or four times between May 25th and October 14th. Grass yields by species for production year trials harvested 2021 are listed in summary **Table 4, pages 8-10.**

Also listed are visual estimates of percent stand and heading date. Heading date is the calendar date when about 5 + seed heads at the boot stage were visible for each variety in one trial replicate. Use percent stand, heading date, and yield to select grass varieties that fit your forage program.

Grass forage quality estimates from 2020 for the trials planted in 2018 and 2019 are presented in **Tables 5 and 6, pages 11-12.** Grass forage quality samples are taken at the first growth only (May/June), not at the other two or three harvests. When grass plants produce seed heads, the seed head stems lower forage quality. Samples from each variety are taken on two days – replicate samples on the day of harvest and replicate samples on the day of heading. Forage quality estimates from 2021 for trials planted in 2019 and 2020 will be available late winter.

Table 7 (page 13) is a summary of grasses planted in 2021, and annual grass trial results. The annual ryegrass trial had good stands to start, but then some varieties killed out perhaps from wet soils. This trial will be replanted in 2022.

See [2022 Cornell Guide for Integrated Field Crop Management](http://fieldcrops.cals.cornell.edu/) for more detailed management information (<http://fieldcrops.cals.cornell.edu/>).

We express appreciation to all of our cooperators for allowing us to plant and harvest forage plot trials on their farms and to all of the people who work to harvest the trials (names on pg. 13). Also, thanks to the seed companies and forage breeding companies that test their forages in New York.

Trial applications for 2022 will be emailed to past trial participants in late January 2022. The applications will also be posted to the web: <https://blogs.cornell.edu/varietytrials/forage/>

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Table 1: NY Alfalfa Cultivar Yield Trial Results - 2021 Forage Yields

T/A = tons per acre dry matter; 5%LSD = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD. CV = A statistical representation of the precision of a trial. Lower is better.

Check cultivars are planted in every alfalfa trial except for Roundup Ready Trials. Checks are Oneida VR, Vernal.

Cultivars (listed alphabetically)	Summary of Conventional Alfalfa Cultivar Performance 2019 - 2021		
	Yielded in the		
	Top 50% in the Trial(s)*		
	Avg. % of Cks	No. of harvests	Total No. of harvests
54VQ52	118	24	30
DYNAMO	113	18	18
F2F6C-418	115	12	12
F2F6C-418NC	109	6	12
HVS4220Q	121	3	3
MARINER V	120	6	6
PERSIST III	116	30	30
RED FALCON BR	117	6	6
REGEN	114	21	33
SW3407	116	9	9
SW4107	115	30	33
SW4412Y	119	3	3
SW4506	125	3	3
SW4513	120	3	3
SW5210	116	18	18
SW5509	125	3	3
SW5520Y	125	3	3
VIKING 394AP	113	12	12

*Cultivars sorted by total yield over all production years.

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

*Data from production year trials only, not from trials sown in 2021.

Cks. = Check Cultivars are Oneida VR, Vernal.

Cobleskill, Schoharie County, Sown May 2018			
Cultivars	2021	3-Yr	
	Total	Total Season	% of Cks.
- tons per acre dry matter -			
SW5210	6.33	17.72	120
54VQ52	6.54	17.60	119
SW4107	6.14	17.11	116
PERSIST III	6.23	17.09	116
DYNAMO	6.29	16.85	114
PLUSS III	6.12	16.20	110
ONEIDA VR	5.62	15.82	107
REGEN	5.49	15.70	106
VERNAL	4.96	13.72	93
SW315LH	3.79	12.63	86
Mean (t/a)	5.55	15.63	14.77
5% LSD	0.51	1.01	
CV (%)	7.3	5.1	

Summary Statistics are for 19 trial entries.

Ithaca, Tompkins County, Sown May 2018			
Cultivars	2021	3-Yr	
	Total	Total Season	% of Cks.
- tons per acre dry matter -			
PERSIST III	4.70	14.00	119
SW4107	4.77	13.84	118
54VQ52	4.66	13.66	117
REGEN	4.43	13.35	114
DYNAMO	4.47	13.20	113
SW5210	4.43	13.13	112
FORTUNE	4.23	13.05	111
PLUSS III	4.34	12.72	109
AFX 460	4.48	12.70	108
GEMSTONE II	4.30	12.59	107
ONEIDA VR	4.04	12.20	104
VERNAL	3.72	11.24	96
Mean (t/a)	4.46	13.24	11.72
5% LSD	0.38	0.70	
CV (%)	6.7	4.2	

Summary Statistics are for 24 trial entries.

Alfalfa Entered as Experimental in Ithaca in 2018			
Cultivar/ Experimental	2021	3-Yr	
	Total (T/A)	Total Season (T/A)	3 Yr % of Cks.
AFX164046*	5.14	14.69	125
AFX164047*	4.51	14.04	120
AFX164048*	4.58	14.02	120
SW1517*	4.76	13.93	119
SW1520*	4.32	13.16	112

Trial, Seeding Year	Soil series, elevation, # of harvests in 2021
Ithaca, 2018	Erie Chippewa channery silt loam, 1054 ft. 3 har.
Cobleskill, 2018	Barbour Tioga fine sandy loam, 1170 ft.3 harvests
Ithaca, 2019	Rhinebeck silt loam, 965 feet, 3 harvests
Aurora, 2019	Honeoye silt loam, 840 feet, 3 harvests
Ithaca, 2020	Williamson silt loam, 950 feet, 3 harvests
Ithaca, 2021	Bath and Valois, 1050 feet, 0 harvests

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2021 Forage Yields

Ithaca, Tompkins County Sown May 2019				Aurora, Cayuga County Sown May 2019			
Cultivars	2021 Total	2-Yr		Cultivars	2020 Total	2-Yr	
		Total Season	% of Cks.			Total Season	% of Cks.
- tons per acre dry matter -				- tons per acre dry matter -			
SW4107	4.50	7.77	121	F2F6C-418	4.87	7.98	113
MARINER V	4.41	7.70	120	PERSIST III	4.76	7.81	110
PERSIST III	4.38	7.67	120	REGEN	4.82	7.72	109
SW3407	4.44	7.62	119	F2F6C-418NC	4.75	7.70	109
VIKING 394AP	4.35	7.59	118	VIKING 394AP	4.70	7.57	107
REGEN	4.44	7.55	118	SW3407	4.55	7.42	105
F2F6C-418	4.33	7.53	117	SW4107	4.56	7.36	104
54VQ52	4.37	7.52	117	VIKING 374HD	4.38	7.23	102
RED FALCON BR	4.30	7.48	117	54VQ52	4.46	7.21	102
VIKING 374HD	4.18	7.41	116	SKYLARK	4.49	7.21	102
F2F6C-418NC	4.22	7.39	115	ONEIDA VR	4.42	7.13	101
WL 349HQ	4.21	7.27	113	ORGANIC VIKING 5200	4.23	7.11	100
ONEIDA VR	3.96	6.84	107	VERNAL	4.32	7.03	99
SIGNATURE	3.92	6.84	107	WL 349HQ	4.23	6.87	97
ORGANIC VIKING 5200	3.44	6.13	96	Mean (t/a)	4.48	7.29	Ck. Mean (t/a) 7.08
VERNAL	3.40	5.98	93	5% LSD	0.27	0.45	
			Ck. Mean (t/a) 6.41	CV (%)	4.7	4.8	
Mean (t/a)	4.23	7.33		Aurora 2019 Experimentals			
5% LSD	0.33	0.41		RELOAD*	4.64	7.68	109
CV (%)	6.1	4.5		BARRICADE II*	4.44	7.29	103
				ACE*	4.11	6.41	91
				Ithaca 2019 Experimentals			
AFX174085*	4.65	8.09	126				
AFX174083*	4.63	8.08	126				
3510-SD-1*	4.47	7.77	121				
RELOAD*	4.42	7.72	120				
154-FL-2*	4.43	7.67	120				
154-SD-1*	4.41	7.59	118				
154-FL-1*	4.33	7.52	117				
SW5511*	4.28	7.50	117				
3510-FL-2*	4.31	7.46	116				
3510-FL-1*	4.35	7.44	116				
154-ANS*	4.28	7.41	116				
SW16XCA32*	4.18	7.36	115				
QUICKGOLD*	4.21	7.26	113				
3510-ANS*	4.17	7.14	111				
BARRICADE II*	3.78	6.73	105				
ACE*	4.06	6.71	105				

Summary statistics are for 36 trial entries.

Summary statistics are for 21 trial entries.

Ithaca, Tompkins County Sown August 2020			Ithaca, Tompkins County (continued) Sown August 2020		
Cultivars	2021 Total	% of Cks.	Cultivars	2021 Total	% of Cks.
SW3407	5.28	127	REGEN	4.54	110
SW5520Y	5.19	125	ONEIDA VR	4.28	103
SW5509	5.18	125	VERNAL	3.99	96
SW4506	5.18	125	Mean (t/a)	4.78	Ck. Mean (t/a) 4.14
HVS4220Q	5.02	121	5% LSD	0.40	
SW4513	4.98	120	CV (%)	6.6	
SW4412Y	4.92	119	Ithaca Experimentals - 2020		
SW4107	4.84	117	AFX174085*	5.41	131
54VR10	4.81	116	AFX174084*	5.29	128
MAGNUM 8-WET	4.78	115	AFX174082*	4.80	116
ALFABAR	4.66	113			

Summary statistics are for 20 trial entries.

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2021 Forage Yields

LSD = Least Significant Difference.

t/a = tons per acre dry matter

ROUNDUP READY ALFALFA TRIALS

Ithaca, Tompkins County

Sown May 2020

Released And Experimental Varieties	2021 Total	% Trial Mean 2021 Total
	t/a	
54VR10	5.41	112
AFX463-RR	5.05	105
AFX455-HVX	4.01	83
	Trial Mean (t/a)	
Mean (t/a)	4.83	4.83
5% LSD	0.31	
CV (%)	4.6	

Summary statistics are for 4 trial entries.

INSECT RESISTANT ALFALFA TRIALS; Sown Ithaca NY 2018 to 2021

Trials harvested 3 times per production year; 2018 trial on Langford channery silt loam; 2019 trial on Rhinebeck silt loam;

2020 trial on Williamson silt loam.

PLH populations were at moderate levels in 2021.

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

* Entered as Experimental Population

Oneida VR, N-R-Gee, and Vernal are alfalfa cultivars susceptible to potato leafhopper.

Sown May 2018

Released And Experimental Varieties	2020 Total	3-Yr Total	PLH Damage Score
	-- tons per acre dry matter --		
FSG 421LH	4.91	14.70	1.0
NRGEE	5.11	14.43	3.6
SW315LH	4.21	13.67	2.8
ONEIDA VR	4.53	13.34	4.6
SCIMITAR*	4.29	13.18	2.2
VERNAL	4.14	12.91	5.0
Mean (t/a)	4.51	13.88	2.7
5% LSD	0.46	0.96	0.8
CV (%)	8.0	5.4	24.0

PLH (Potato leafhopper) Damage - 1=minor /no damage; 5=severe damage

Summary statistics are for 11 trial entries.

Sown May 2019

Released And Experimental Varieties	2020 Total	2-Yr Total	PLH Damage Score
	-- tons per acre dry matter --		
SCEPTER	4.99	8.92	1.0
SW315LH	4.84	8.68	1.2
BLUEJAY 4HR	4.66	8.35	2.5
431RRLH	4.68	8.24	1.0
ONEIDA VR	4.47	7.80	4.5
NRGEE	4.65	7.70	4.1
VERNAL	4.11	7.18	4.1
GO-2018-FU*	4.08	6.85	2.6
TRIAD*E*	3.91	6.70	5.0
PAOLA*	3.75	6.55	4.8
Mean (t/a)	4.49	7.84	2.8
5% LSD	0.40	0.64	0.7
CV (%)	6.9	6.4	18.5

PLH (Potato leafhopper) Damage - 1=minor /no damage; 5=severe damage

Summary statistics are for 13 trial entries.

Sown August 2020

Released And Experimental Varieties	2020 Total t/a	PLH Damage Score
55H96	4.90	1.5
SW16ZPD02*	4.65	1.0
BLUEBIRD	4.42	3.2
ONEIDA VR	4.26	5.0
VERNAL	3.99	5.0
Mean (t/a)	4.36	2.7
5% LSD	0.36	0.8
CV (%)	6.6	22.7

PLH (Potato leafhopper) Damage - 1=minor /no damage; 5=severe damage

Summary statistics are for 13 trial entries.

Sown May 2021

Released And Experimental Varieties		
55H96	Pioneer	NO HARVESTS
FSG421LH	check	2021
ONEIDA VR	check	
SW4602LH*	S&W	
SW525LH*	S&W	
VERNAL	check	
WL 358LH	check	

PLH (Potato leafhopper) Damage - 1=minor /no damage; 5=severe damage

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Table 2: Alfalfa Cultivar Features

For more information log on to the Web:

<https://blogs.cornell.edu/varietytrials/forage/>

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			
ORGANIC VIKING 5200	Albert Lea	5	HR	HR	HR	HR	HR	800-352-5247	www.alseed.com	
VIKING 374HD	Albert Lea	4	HR	HR	HR	HR	HR			
VIKING 394AP	Albert Lea	4	HR	HR	HR	HR	HR			
AFX 460	Alforex	4	HR	HR	HR	HR	HR	877-560-5181	www.alforexseeds.com	
AFX455-HVX	Alforex	4	HR	HR	HR	HR	R			
AFX463-RR	Alforex	4	HR	HR	HR	HR	HR			
QUICKGOLD	Alforex	5	HR	HR	HR	HR	HR			
ALFABAR	Barenbrug	4,3,2	HR	HR	HR	HR	HR	800-547-4101	www.barusa.com	
ACE	BrettYoung	4	HR	HR	HR	HR	HR	800-665-5015	www.brettyoung.ca/	
BARRICADE II	BrettYoung	4	HR	HR	HR	HR	HR			
DYNAMO	BrettYoung	4	HR	HR	HR	HR	HR			
RELOAD	BrettYoung	4	HR	HR	HR	HR	HR			
BLUEBIRD	Blue River Organic Seed	5	HR	HR	HR	HR	HR	800-370-7979	www.blueriverorgseed.com	
BLUEJAY 4HR	Blue River Organic Seed	3								
SKYLARK	Blue River Organic Seed	4	HR	HR	HR	HR	HR			
RED FALCON BR	Blue River Organic Seed	4	HR	HR	HR	HR	HR			
GEMSTONE II	Chemgro	4	HR	HR	HR	HR	HR	800-346-4769	www.chemgro.com	
MAGNUM 8 WET	Dairyland Seed Co.							800-236-0163	www.dairylandseed.com	
FORTUNE	DLF Pickseed	4	HR	HR	HR	HR	HR	800-445-2251	www.dlfis.com	
F2F6C-418	Farm Business Network							844-200-3276	www.fbn.com	
F2F6C-418NC	Farm Business Network									
431RRLH	GROWMARK FS/Seedway	4	HR	HR	HR	HR	HR	800-338-4769	www.fsseed.com	
MARINER V	GROWMARK FS	4	HR	HR	HR	HR	HR			
SCEPTER	GROWMARK FS	4	HR	HR	HR	HR	HR			
SIGNATURE	GROWMARK FS	4	HR	HR	HR	HR	HR			
SCIMITAR	GROWMARK FS	4	HR	HR	HR	HR	HR			
PAOLA	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	800-990-1390	www.interlakeforage seeds	
TRIADE	Interlake Forage Seeds	5	HR	HR	HR	HR	HR			
MVS4220Q	Mountain View Seeds	4	HR	HR	HR	HR	HR	503-588-7333	www.mtviewseeds.com	
54VQ52	Pioneer Hi-Bred	4	HR	HR	R	HR	HR	800-247-6803	www.pioneer.com	
54VR10	Pioneer Hi-Bred	4	HR	HR	R	HR	HR			
55H96	Pioneer Hi-Bred	5	HR	R	HR	HR	HR			
PERSIST III	Seed Consultants	4	HR	HR	HR	HR	HR	800-708-2676	www.seedconsultants.com	
PLUSS III	Seed Consultants	4	HR	HR	HR	HR	HR			
REGEN	Seedway	3	R	HR	HR	HR	R	800-836-3710	www.seedway.com	
FSG 421LH	Seedway	4	HR	HR	HR	HR	HR			
SW3407	Alfalfa Partners	3	HR	HR	HR	HR	HR	720-506-9191	www.alfalfapartners.com	
SW4107	Alfalfa Partners	4	HR	HR	HR	HR	HR			
SW4412Y	Alfalfa Partners	4	HR	HR	HR	HR	HR			
SW4506	Alfalfa Partners									
SW4513	Alfalfa Partners									
SW5210	Alfalfa Partners	5	HR	HR	HR	HR	HR			
SW5509	Alfalfa Partners									
SW5520Y	Alfalfa Partners									
WL 349HQ	Seedway; Crop Prod. Services; W-L	4	HR	HR	HR	HR	HR	717-917-1609	www.wlresearch.com	

*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

Table 3: Red Clover Cultivar Yield Trials- 2021 Ithaca, Tompkins Co.

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

RED CLOVER Checks are Marathon and Cinnamon Plus

Sown May 2018		2021		3-Yr.	
Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	Total	% of Cks
		T/A		T/A	
Freedom!	Barenbrug	1.57	177	10.85	122
Blaze	Mountain View Seeds	1.50	169	10.20	114
Freedom! MR	Barenbrug	1.43	161	9.87	110
Cinnamon Plus	check/Allied Seed, L.L.C.	1.17	132	9.68	108
Marathon	check	0.60	67	8.17	91
			Ck. Mean		Ck. Mean
	Trial Mean	1.16	0.89	9.51	8.93
	5% LSD	0.49		1.02	

Trial Means are for 10 entries.

Check varieties are Marathon and Cinnamon Plus.

Sown June 2019		2021			2020		2-Yr	
Cultivar/Experimental	Marketing Company	Total Season	% of Cks.	% Stand Nov. 2021	Total Season	% of Cks.	Total Season	% of Cks.
		T/A			T/A		T/A	
Freedom!MR	Barenbrug	4.15	125	62	3.13	108	7.28	117
BAR TP9	Barenbrug	3.91	118	66	2.90	100	6.81	110
Cardinal 2	Blue River Organic Seed	3.78	114	62	3.01	104	6.78	109
BAR TP11	Barenbrug	3.43	104	60	3.10	107	6.53	105
Cinnamon Plus	check	3.58	108	64	2.92	101	6.50	105
Marathon	check	3.03	92	54	2.86	99	5.90	95
GA-9908	Smith Seed Services	2.83	85	48	2.89	100	5.71	92
			Ck. Mean			Ck. Mean		Ck. Mean
	Trial Mean	3.33	3.31	55	2.79	2.89	6.12	6.20
	5% LSD	0.59		10	0.21		0.67	

Overall means are for 14 trial entries.

Sown May 2021		Sown May 2021 (continued)	
Cultivar/Experimental	Marketing Company	Cultivar/Experimental	Marketing Company
BAR TP10	Barenbrug	Freedom!MR	Barenbrug
Barduro	Barenbrug	Marathon	check
Blaze	Mountain View Seeds	RC08	Bailey Seed and Grain
Cinnamon Plus	check	Redkin	DLF Pickseed
CW040040	Barenbrug	Robust III	Columbia Seeds
CW30091	Barenbrug	TP-12	DLF Pickseed
Evolve	DLF Pickseed		

Trial will be harvested in 2022.

Marketing Company*	Phone	Web address
Allied Seed, L.L.C.	208-250-6321	www.alliedseed.com
Barenbrug	800-547-4101	www.barusa.com
Blue River Organic Seed	800-370-7979	www.blueriverorgseed.com
Brett Young	800-665-5015	www.brettyoung.ca
Columbia Seeds	888-681-7333	www.columbiaseeds.com
DLF Pickseed USA Inc.	800-445-2251	www.dlfis.com/
Grassland Oregon	503-566-9900	www.grasslandoregon.com
GROWMARK FS	800-787-2767	www.growmarkfs.com/midatlantic
LaCrosse Seed	800-328-1909	www.lacrosseseed.com
Mountain View Seeds	503-588-7333	www.mtviewseeds.com/
OreGro	541-258-1001	www.oregroseeds.com/
Preferred Seed	716-895-7333	www.preferredseed.com
Pure Seed	503-651-2130	www.pureseed.com
S&W Seed Co.	855-767-4486	www.swseedco.com
Seedway	800-836-3710	www.seedway.com
Smith Seed Services	888-550-2930	www.smithseed.com

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Table 4: 2021 Perennial Forage Grass Yield Summary

(T/A - tons per acre dry matter)

Ithaca, Tompkins Co., Sown 2018, 2019, 2020, 2021

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

Ammonium sulfate was applied at 315 lb/acre after each harvest.

LSD(0.05) = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

SOILS - 2018: Erie channery silt loam; 2019 Rhinebeck silt loam; 2020 Niagara silt loam; 2021 Langford channery silt loam.

Species/Cultivar	Marketer	2021			2020			2019		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	
		T/A			T/A			T/A	T/A	
Orchardgrass		Sown May 18, 2018								
Pennlate	check	5.60	60	18-May	3.41	70	24-May	5.25	20-May	14.26
Bounty II	Allied/Seedway	5.41	58	18-May	3.29	65	22-May	5.00	20-May	13.70
OG 88	DLF Pickseed	5.32	63	20-May	3.23	63	24-May	5.10	23-May	13.65
Blizzard	Allied/Seedway	5.11	60	20-May	3.24	68	24-May	5.00	20-May	13.35
Potomac	check	4.85	63	18-May	2.99	70	22-May	4.71	20-May	12.55
OG 80	DLF Pickseed	5.09	50	22-May	2.62	55	27-May	4.50	26-May	12.20
Swante	Smith Seed	4.37	50	22-May	2.60	48	25-May	3.98	23-May	10.95
	LSD(.05)	0.90	7		0.35	6		0.57		1.55
Orchardgrass		Sown May 22, 2019								
Pennlate	check	5.02	79	20-May	3.12	90	24-May			8.15
Persist	Smith Seed Services	4.83	74	18-May	3.19	89	22-May			8.01
Persist II	Smith Seed Services	4.88	79	20-May	3.04	88	24-May			7.92
Potomac	check	4.86	80	18-May	2.89	90	24-May			7.75
Albert	OreGro	4.81	79	20-May	2.89	84	26-May			7.70
DLFPS-OG 79	DLFPickseed	4.71	71	22-May	2.89	90	26-May			7.60
DLFPS-OG 70	DLFPickseed	4.53	79	22-May	2.85	86	28-May			7.38
Bighorn	MVS	4.72	79	22-May	2.65	86	27-May			7.36
Devour	MVS	4.56	73	23-May	2.76	88	28-May			7.31
DLFPS-OG 96	DLFPickseed	4.35	79	22-May	2.84	88	28-May			7.19
Barlegro	Barenbrug	4.38	79	28-May	2.81	88	31-May			7.19
Alpine II	MVS	4.53	73	22-May	2.57	85	31-May			7.10
BAR DGLBLD	Barenbrug	4.35	78	28-May	2.66	88	29-May			7.01
DLFPS-OG 80	DLFPickseed	4.35	71	20-May	2.65	83	28-May			7.00
BARDGL 48	Barenbrug	4.32	81	20-May	2.33	90	24-May			6.65
	LSD(.05)	0.43	5.9		0.39	5				0.70
Orchardgrass		Sown August 10, 2020								
Harvestar	Columbia Seeds/ Radix Res.	6.35	80	20-May						
OG 96	DLF Pickseed	6.26	76	22-May						
Potomac	check	6.17	78	17-May						
OG 80	DLF Pickseed	6.13	74	22-May						
Pennlate	check	6.04	80	18-May						
Ammo	Barenbrug	5.90	84	17-May						
Intensiv	Barenbrug	5.85	80	23-May						
BAR DGLF 2094	Barenbrug	5.09	78	26-May						
BAR DGLF 2095	Barenbrug	5.08	76	28-May						
	Trial Mean	0.33	5.8							
Meadow Fescue		Sown May 18, 2018								
BAR FP 17079	Barenbrug	4.37	58	25-May	2.52	70	30-May	4.86	30-May	11.75
Pradel	Barenbrug	4.45	48	25-May	2.16	50	29-May	4.42	26-May	11.03
BAR FPF 32	Barenbrug	4.18	45	25-May	2.31	60	29-May	4.35	28-May	10.84
SW Minto	Albert Lea Seed - check	3.84	45	25-May	2.20	63	29-May	4.44	26-May	10.48
	LSD(.05)	0.31	5.3		0.34	16		0.50		1.06
Meadow Fescue		Sown May 22, 2019								
Driftless	Barenbrug	4.67	65	25-May	2.93	73	29-May			7.60
Pradel	check	4.75	71	23-May	2.81	81	28-May			7.56
Pradel	Barenbrug	4.70	74	23-May	2.77	83	28-May			7.47
BAR FPF79	Barenbrug	4.50	65	28-May	2.95	78	31-May			7.44
BAR FPFBLD	Barenbrug	4.57	71	23-May	2.75	76	29-May			7.31
	LSD(.05)	0.37	8		0.33	8				0.59
Meadow Fescue		Sown August 10, 2020								
Pradel	Barenbrug	6.65	76	22-May						
Pradel	check	6.61	75	22-May						
BAR FP 2044	Barenbrug	6.55	83	23-May						
BAR81d	Barenbrug	6.43	71	22-May						
BAR FPF 82	Barenbrug	5.97	84	22-May						
Driftless	Barenbrug	5.94	73	23-May						
BAR FPF 77-2	Barenbrug	5.69	89	23-May						
	LSD(.05)	0.49	7							

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Table 4 (con't.) 2021 Perennial Forage Grass Yield Summary
Ithaca, Tompkins Co., Sown 2018, 2019, 2020, 2021

(T/A - tons per acre dry matter)

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

Ammonium sulfate was applied at 315 lb/acre after each harvest.

LSD(0.05) = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

SOILS - 2017: Langford channery silt loam, 2018: Erie channery silt loam; 2019: Rhinebeck silt loam, 2020: Niagara silt loam.

Species/Cultivar	Marketer	2021			2020			2019		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	
		T/A			T/A			T/A	T/A	
Tall Fescue		Sown May 18, 2018								
KY 31+	check	6.08	65	22-May	3.18	80	27-May	5.60	24-May	14.86
Ranchero	Smith Seed	5.99	63	20-May	3.01	78	24-May	4.83	23-May	13.84
FTF 95	DLF Pickseed	5.61	60	25-May	3.07	80	27-May	5.05	24-May	13.72
FTF 96	DLF Pickseed	5.67	63	22-May	2.97	80	27-May	5.06	26-May	13.70
BAR FAF 17135	Barenbrug	5.46	65	25-May	2.89	78	29-May	5.12	30-May	13.48
BarElite	Barenbrug	5.34	63	25-May	2.77	78	29-May	5.02	30-May	13.12
BAR FAF 17137	Barenbrug	5.10	60	25-May	2.81	83	29-May	4.94	30-May	12.85
Bariane	Barenbrug	5.25	60	28-May	2.77	78	30-May	4.65	2-Jun	12.67
7FACF82	Barenbrug	5.08	63	28-May	2.37	78	30-May	4.71	2-Jun	12.17
	LSD(.05)	0.33	16.3		0.31	6		0.35		0.57
Tall Fescue		Sown May 22, 2019								
K-32	OreGro Seeds	6.38	64	21-May	4.03	75	25-May			10.40
Velvet	OreGro Seeds	5.97	58	23-May	3.64	80	28-May			9.61
Armory	Barenbrug	6.15	63	23-May	3.40	83	28-May			9.55
BAR FABLD	Barenbrug	5.56	68	28-May	3.52	83	29-May			9.08
Bariane	Barenbrug	5.47	60	28-May	3.40	83	31-May			8.87
KY 31+	check	6.32	63	22-May	2.47	74	28-May			8.79
PST-5SLF	Pure Seed Testing	5.20	65	28-May	2.87	83	31-May			8.07
	LSD(.05)	0.44	7		0.41	9				0.64
Tall Fescue		Sown August 10, 2020								
FTF 118	DLF Pickseed	7.69	75	22-May						
Aprilia	BrettYoung	7.35	71	22-May						
Armory	Barenbrug	7.29	83	20-May						
FTF 119	DLF Pickseed	7.19	73	20-May						
BAR FAF 146	Barenbrug	7.02	78	22-May						
BAR FAF 137	Barenbrug	6.94	81	23-May						
BAR FAF 135	Barenbrug	6.61	80	23-May						
7 FACF 82	Barenbrug	6.58	78	25-May						
Bariane	Barenbrug	6.48	78	25-May						
BAR FAFL 239	Barenbrug	6.36	81	22-May						
BAR FA 9125	Barenbrug	5.27	81	25-May						
	LSD(.05)	0.34	7							
Festulolium		Sown May 18, 2018								
FPF 2	DLF Pickseed	5.97	63	20-May	3.26	75	24-May	5.44	23-May	14.66
Fojtan	DLF Pickseed	5.53	68	22-May	3.00	80	26-May	5.17	26-May	13.71
Hipast	DLF Pickseed	5.04	55	25-May	2.89	70	29-May	4.93	2-Jun	12.85
Spring Green	check	4.22	48	25-May	2.13	65	31-May	4.90	26-May	11.24
	LSD(.05)	0.36	5.5		0.18	8		0.24		0.33
Festulolium and M. Fescue		Sown May 22, 2019								
DLFPS-FPF 6	DLFPickseed	6.14		23-May	3.66	80	28-May			9.79
DLFPS-FPF 5	DLFPickseed	5.71		22-May	3.56	84	28-May			9.27
Fojtan	DLFPickseed	5.80		23-May	3.40	81	28-May			9.21
Hipast	DLFPickseed	5.51		25-May	3.40	79	1-Jun			8.91
Petrarca, M.Fescue	DLFPickseed	3.99		23-May	2.84	74	28-May			6.84
Merifest, M.Fescue	DLFPickseed	3.90		22-May	2.65	71	28-May			6.55
Spring Green	check	3.54		25-May	2.92	70	28-May			6.46
ORRUS	OreGro	3.35		28-May	2.64	69	4-Jun			5.99
	LSD(.05)	0.56			0.45	8				0.77

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Table 4 (con't.) 2021 Perennial Forage Grass Yield Summary

(T/A - tons per acre dry matter)

Ithaca, Tompkins Co., Sown 2018, 2019, 2020, 2021

Heading date is date when 5 heads in a 3.5 x 16 foot plot were visible. Ammonium sulfate was applied at 315 lb/acre after each harvest.

LSD(0.05) = to claim statistically significant yield differences between two cultivars, the yield difference must be equal to or greater than the LSD.

SOILS - 2018: Erie channery silt loam; 2019 Rhinebeck silt loam; 2020 Niagara silt loam; 2021 Langford channery silt loam.

Species/Cultivar	Marketer	2021			2020			2019		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	
		T/A			T/A			T/A		T/A
Perennial Ryegrass and Kentucky Bluegrass					Sown May 18, 2018					
Elena	Seedway	4.19	53	28-May	2.07	58	4-Jun	4.88	6-Jun	11.14
Tetragain SLT	Pure Seed Testing	4.05	55	28-May	2.02	58	4-Jun	4.77	2-Jun	10.84
ROM99	Barenbrug	3.97	55	3-Jun	1.74	70	9-Jun	4.75	10-Jun	10.46
Remington	Barenbrug	3.88	65	3-Jun	1.64	73	9-Jun	4.42	10-Jun	9.93
Linn	check	3.48	40	22-May	1.82	48	24-May	4.09	21-May	9.40
Calibra	check	3.47	48	28-May	1.58	60	4-Jun	4.12	2-Jun	9.17
BAR LP 17253	Barenbrug	3.62	55	28-May	1.61	65	9-Jun	3.83	10-Jun	9.06
PST-07S-95 (Tirem) K. Bluegr.	Pure Seed	3.82	50	20-May	1.44	55	22-May	3.25	18-May	8.50
	LSD(.05)	0.41	8		0.24	12		0.60		1.08
Perennial Ryegrass					Sown May 22, 2019					
Boost	OreGro	3.70	61	25-May	2.00	71	28-May			5.70
Tetragain SLT	Pure Seed Testing	3.55	60	28-May	2.07	73	29-May			5.62
Tribal	BrettYoung	3.26	79	28-May	1.52	83	1-Jun			4.78
PI2B2	OreGro	3.01	71	25-May	1.66	81	31-May			4.67
Calibra	check	2.87	70	28-May	1.65	78	4-Jun			4.52
Linn	check	2.89	63	21-May	1.47	78	26-May			4.36
	LSD(.05)	0.38	11		0.29	6				0.54
Perennial Ryegrass					Sown August 10, 2020					
Spring Green	check	6.79	83	23-May						
Remington	Barenbrug	5.97	89	28-May						
Remington NEA2	Barenbrug	5.66	89	28-May						
TetraSweet	MVS/ Peak Plant Genetics	5.53	84	23-May						
Calibra	check	5.23	84	25-May						
Linn	check	5.00	84	20-May						
	LSD(.05)	0.35	5							

Variety	Marketing Company	H1 Yield	H2 Yield	Total
		2021	2021	2021
Annual Grasses		T/A	T/A	T/A
AMP	Columbia/ Peak Plant Gen.	1.72	0.50	2.22
SATSUKIBARE EX	Burlingham Seeds	1.72	0.41	2.14
DynaPlus	Columbia/ Peak Plant Gen.	1.54	0.37	1.91
Awesome	BrettYoung	1.52	0.31	1.83
KAIR 12DT	Burlingham Seeds	1.58	0.25	1.83
KAIR12 TE	Burlingham Seeds	1.45	0.35	1.80
KAIR DS	Burlingham Seeds	1.39	0.34	1.73
Denver	BrettYoung	1.23	0.27	1.49
Feast II	check	1.28	0.18	1.46
	LSD (.05)	0.25	0.33	0.35

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2021

Perennial Forage Grass Varieties - 2020 Forage Quality, Maturity and Yield at Spring Growth Boot Stage (See Table 5 below)

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

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

The samples taken in 2021 will be analyzed and reported on in 2022.

Table 5: Spring Forage Quality Data for Grass Varieties (2020 Trial Samples)

	Trial Sown 2018 Boot Stage in 2020			Trial Sown 2019 Boot Stage in 2020			
	Date at Boot Stage	% NDF	% NDFd	Date at Boot Stage	% NDF	% NDFd	
Perennial Ryegrass				Perennial Ryegrass			
Linn	24-May	41	92	Linn	26-May	44	90
PST-2TETS	4-Jun	52	86	Boost	28-May	50	87
Calibra	4-Jun	46	88	PST-2TETS	29-May	50	85
Elena	4-Jun	53	84	PI2B2	31-May	52	85
BAR LP 17253	9-Jun	60	80	Tribal	1-Jun	40	85
ROM99	9-Jun	50	86	Calibra	4-Jun	46	86
Remington	9-Jun	53	83				
Kentucky Bluegrass				Tall Fescue			
PST-07S-95 (Tirem)	22-May	47	89	K-32	25-May	59	77
Tall Fescue				KY 31+	28-May	47	85
STF50	24-May	49	85	Velvet	28-May	55	76
FTF 96	27-May	57	82	Armory	28-May	55	78
FTF 95	27-May	56	82	BAR FABLD	29-May	57	77
KY 31+	27-May	55	82	Bariane	31-May	55	79
BAR FAF 17135	29-May	57	82	PST-5SLF	31-May	57	77
BAR FAF 17137	29-May	59	82				
BarElite	29-May	60	81	Meadow Fescue			
7FACF82	30-May	58	80	Pradel	28-May	55	84
Bariane	30-May	59	80	Driftless	29-May	59	81
Meadow Fescue				BAR FPFBLD	29-May	56	83
Pradel	29-May	60	86	BAR FPF79	31-May	58	81
BAR FPF 32	29-May	61	85	Orchardgrass			
SW Minto	29-May	59	86	Persist	22-May	58	81
BAR FP 17079	30-May	NA	NA	BARDGL 48	24-May	62	82
Orchardgrass				Persist II	24-May	63	81
Bounty II	22-May	55	86	Potomac	24-May	62	79
Potomac	22-May	53	87	Pennlate	24-May	62	82
Blizzard	24-May	59	85	Albert	26-May	63	82
OG 88	24-May	55	89	DLFPS-OG 79	26-May	60	83
Pennlate	24-May	56	86	Bighorn	27-May	65	80
Swante	25-May	58	87	DLFPS-OG 70	28-May	63	83
OG 80	27-May	57	88	DLFPS-OG 80	28-May	62	84
Festulolium				DLFPS-OG 96	28-May	62	83
FPF 2	24-May	62	78	Devour	28-May	66	80
Fojtan	26-May	58	83	BAR DGLBLD	29-May	65	81
Hipast	29-May	58	84	Barlegro	31-May	64	80
Spring Green	31-May	54	85	Alpine II	31-May	63	83
				Festulolium			
				DLFPS-FPF 5	28-May	57	80
				DLFPS-FPF 6	28-May	57	78
				Fojitan	28-May	58	79
				MerifestMF	28-May	54	90
				Spring Green	28-May	47	87
				PetrarcaMF	28-May	56	85
				Hipast	1-Jun	54	80
				ORRUS	4-Jun	49	84
	Date	%NDF	%NDFd	Date	%NDF	%NDFd	
Average over trials	Various	55	85	Average over trials	Various	57	82

Perennial Forage Grass Varieties - 2020 Forage Quality, Maturity and Yield at Spring Growth at Harvest 1 (See Table 6 below)

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

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

Samples from 2021 will analyzed and forage quality reported in 2022.

Table 6: 2020 Spring, First Harvest Forage Quality Data for Grass Varieties

	Trial Sown 2018						Trial Sown 2019				
	First Harvest in 2020- June 1			% Seed Heads at Harvest 2	2020 Aftermath Forage Yield (t/a)		First Harvest in 2020- May 27			% Seed Heads at Harvest 2	2020 Aftermath Forage Yield (t/a)
	Yield (t/a) Harvest 1	% NDF	% NDFD				Yield (t/a) Harvest 1	% NDF	% NDFD		
Perennial Ryegrass						Perennial Ryegrass					
Linn	1.26	59	79	18	0.56	Linn	1.00	50	85	33	0.46
PST-2TETS	1.39	48	85	40	0.64	Boost	1.12	50	87	83	0.87
Calibra	0.92	41	89	33	0.67	PST-2TETS	1.12	46	89	85	0.95
Elena	1.37	49	83	60	0.70	PI2B2	0.80	49	88	90	0.87
BAR LP 17253	0.81	48	88	40	0.81	Tribal	0.59	40	86	83	0.93
ROM99	1.03	43	88	55	0.71	Calibra	0.64	45	90	88	1.01
Remington	0.92	45	88	65	0.72						
Kentucky Bluegrass						Tall Fescue					
PST-07S-95 (Tirem) K.	0.99	57	74	13	0.45	K-32	1.21	59	77	1	2.82
Tall Fescue						KY 31+	0.37	47	85	60	2.10
STF50	1.44	62	78	0	1.57	Velvet	0.87	55	76	6	2.77
FTF 96	1.34	62	79	0	1.63	Armory	1.06	55	78	6	2.33
FTF 95	1.42	60	79	0	1.65	BAR FABLD	0.85	54	80	11	2.68
KY 31+	1.49	61	80	0	1.69	Bariane	0.77	54	79	19	2.64
BAR FAF 17135	1.17	58	80	0	1.73	PST-5SLF	0.60	55	78	19	2.28
BAR FAF 17137	1.25	58	81	0	1.57						
BarElite	1.21	58	82	0	1.56	Meadow Fescue					
7FACF82	1.09	58	80	0	1.28	Pradel	0.74	55	84	20	2.04
Bariane	1.28	59	80	0	1.49	Driftless	0.77	58	83	53	2.16
Meadow Fescue						BAR FPFBLD	0.79	53	85	25	1.96
Pradel	1.19	59	83	1	0.97	BAR FPF79	0.72	55	84	48	2.23
BAR FPF 32	1.32	58	85	3	0.99	Orchardgrass					
SW Minto	1.29	59	83	2	0.91	Persist	0.92	66	76	0	2.27
BAR FP 17079	1.37	61	84	6	1.15	BARDGL 48	0.84	66	82	0	1.49
Orchardgrass						Persist II	0.90	66	78	0	2.14
Bounty II	1.77	68	76	0	1.53	Potomac	1.00	66	78	0	1.89
Potomac	1.35	67	77	0	1.64	Pennlate	1.05	65	79	0	2.08
Blizzard	1.86	69	76	0	1.38	Albert	0.97	64	81	0	1.92
OG 88	1.48	65	80	0	1.75	DLFPS-OG 79	0.78	61	83	0	2.11
Pennlate	1.69	64	80	0	1.72	Bighorn	0.75	65	80	0	1.90
Swante	1.36	65	81	0	1.24	DLFPS-OG 70	0.82	63	83	0	2.03
OG 80	0.88	60	84	0	1.74	DLFPS-OG 80	0.53	62	84	0	2.12
						DLFPS-OG 96	0.69	62	83	0	2.16
Festulolium						Devour	0.65	66	80	0	2.11
FPF 2	1.51	62	78	1	1.75	BAR DGLBLD	0.76	62	84	0	1.90
Fojtan	1.44	63	80	1	1.56	Barlegro	0.79	62	82	0	2.02
Hipast	1.21	59	82	1	1.68	Alpine II	0.57	60	84	0	2.00
Spring Green	1.33	54	85	33	0.80	Festulolium					
						DLFPS-FPF 5	1.53	57	80	1	2.03
<i>Harvest Date June 1, 2020</i>	<i>Yield t/a</i>	<i>%NDF</i>	<i>%NDFd</i>		<i>Yield t/a</i>	<i>Harvest Date May 27, 2020</i>	<i>Yield t/a</i>	<i>%NDF</i>	<i>%NDFd</i>		<i>Yield t/a</i>
Average over trials	1.29	58	81		1.26	Average over trials	0.94	57	82		1.87

Table 7: Perennial Cool Season Grass Trials Sown on May 18, 2021.

2021 Perennial Grass Trials - No harvests in 2021

Variety	Marketing Co.	Variety	Marketing Co.
Orchardgrass		Festulolium	
Persist	Smith Seeds	FPF 7	DLF Pickseed
Persist II	Smith Seeds	FPF 8	DLF Pickseed
OG 0703	Seedway	Lenor	Columbia Seeds
Captur	DLF Pickseed	Tatran	Columbia Seeds
OG96	DLF Pickseed	Spring Green	check
Pennlate	check	Pradel	check
Potomac	check	Sugarcrest	Mountain View Seeds
Alpine II	Mountain View Seeds		
Bighorn	Mountain View Seeds		
Rushmore II	Mountain View Seeds		
Timothy		Tall Fescue	
PolarKing	BrettYoung	Cajun II	Smith Seeds
Baronaise	Barenbrug	Ranchero	Smith Seeds
Barfleo	Barenbrug	SETFN97	Smith Seeds
Climax	check	SETFPC-5BK	Smith Seeds
Carson	Mountain View Seeds	KY-31	check
KY-Early	check	Fawn	check
Express II	Seedway	Dominate	Seedway
Conquest	Seedway	Greendale	DLF Pickseed
Zenyatta	DLF Pickseed	Triumphant	DLF Pickseed
Valor	DLF Pickseed	FTF 96	DLF Pickseed
		Teton II	Mountain View Seeds
Perennial Ryegrass		Bromegrass	
GPT14021	Mountain View Seeds	S9549	BrettYoung
Tetramag	Mountain View Seeds	S9356M	BrettYoung
Tetrasweet	Mountain View Seeds	Peak	Allied
Remington	Barenbrug	Stratus	Allied
Remington NEA2	Barenbrug	Barricade	Barenbrug
UGA E+	Mountain View Seeds		

Company - Grasses	Phone	Web address	Company - Grasses	Phone	Web address
Albert Lea Seeds	800-352-5247	www.alseed.com	Mountain View Seeds	503-588-7333	www.mtviewseeds.com
Allied Seed, L.L.C.	208-250-6321	www.alliedseed.com	OreGro	541-258-1001	www.oregroseeds.com
Barenbrug USA	800-547-4101	www.barusa.com	Preferred Seed	716-895-7333	www.preferredseed.com
Brett Young	800-665-5015	www.brettyoung.ca	Pure Seed	503-651-2130	www.pureseed.com
Columbia Seeds	888-681-7333	www.columbiaseeds.com	S&W Seed Co.	855-767-4486	www.swseedco.com
DLF Pickseed USA Inc.	800-445-2251	www.dlfi.com/	Seedway	800-836-3710	www.seedway.com
Grassland Oregon	503-566-9900	www.grasslandoregon.com	Smith Seed	888-550-2930	www.smithseed.com
Healthy Herd Genetics	315-280-0038				

Cornell University Forage Project - 2021 Cooperators and Cornell Student Research Assistants and Seasonal Employees.

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Jason Schiller, Ryan Crawford, Jesse Chavez, Johanna Gertin, Adrian Driesbaugh, Christina McMillan

Name	Affiliation	Name	Affiliation
M. Smith/M. Schrader	CUAES Director of Operations	Paul Stachowski	CUAES Musgrave Farm Manager
Tim Dodge	CUAES Facilities Manager	Jeff Stayton	CUAES Musgrave Field Assistant
Gene Sczepanski	CUAES Farm Manager	Joe Lawrence	PRO-Dairy, CALS, Cornell University
Thomas Edwards	CUAES Field Technician	Ken Wise	NYS IPM Educator
JC Mosher	CUAES Field Technician		
Lucas Thomas	CUAES Mechanic	Jenn Thomas Murphy	Extension Communication Specialist
Dr. Rick Grant	The William H. Miner Institute, President	Craig Cramer	Communication Specialist
Dr. Mike Davis	CUAES Farm Manager, Willsboro Farm	<u>Cornell Cooperative Extension:</u>	
Del Meseck	CUAES Field Assistant, Willsboro Farm	Aaron Gabriel, Erik Smith, Kitty O'Neil, Mike Hunter	
Adam Sayward	CUAES Field Assistant, Willsboro Farm	Mike Stanyard, Jodi Letham, Janice Degni, Keith Severson,	
Dr. Jerry Cherney	Cornell Univ. Forage Agronomist, Professor	Dale Dewing, Kathryn Evans, Jeff Miller.	
Robert Deubler	Cornell Univ. Research Support Specialist	NYS Ag Experiment Station Staff, including	
Tom Poltynski	SUNY Cobleskill, Farm Coordinator	M. Christiansen and RJ Richtmyer	
Kane Seamon	SUNY Cobleskill, Farm Manager		

CUAES: Cornell University Agricultural Experiment Station <https://cuaes.cals.cornell.edu/>

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