

NEW YORK FORAGE LEGUME AND GRASS VARIETY YIELD TRIALS

SUMMARY FOR 2020 – SEASON TOTALS



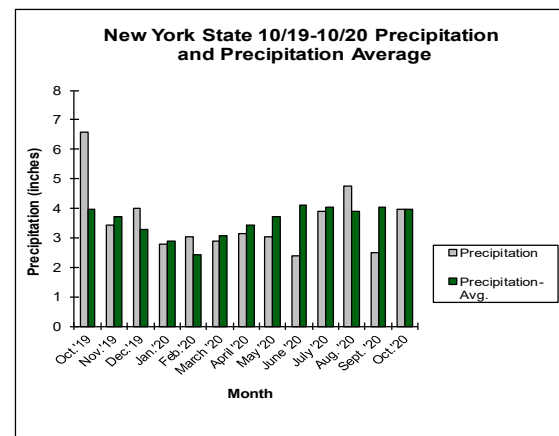
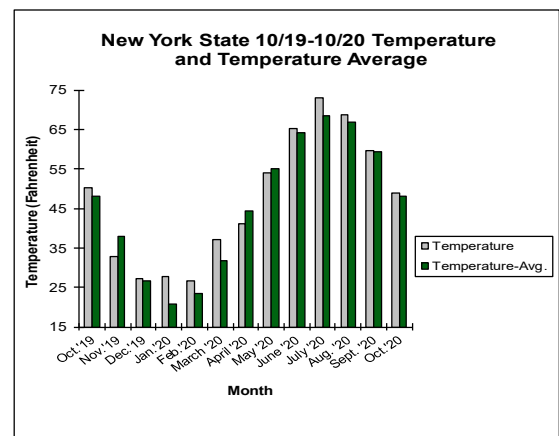
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<https://blogs.cornell.edu/varietytrials/forage/> Photo: First Production Year Alfalfa Trial at Cornell University Ag Experiment Station, Musgrave Research Station.

Introduction Forage variety total season yields from New York in the 2020 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 2020, Cornell reactivated essential research in time to manage and harvest perennial forage trials.

Alfalfa yields for 2020 averaged 4.0 tons per acre dry matter (1.0 tons less than in 2019), red clover yields averaged 2.7 tons per acre dry matter (1.4 tons per acre less than in 2019), and perennial forage grass yields averaged 2.4 tons per acre dry matter (1.8 tons per acre less than in 2019).

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 10/19 to 10/20 temperature and precipitation. Weather data from the Northeast Regional Climate Center at Cornell U. <http://www.nrec.cornell.edu/regional/tables/tables.html>.

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Weather and the 2020 Season. In New York State, snow cover was below normal and temperatures were above normal from January to March. April and May had lower temperatures than normal. In Ithaca, there were 9 nights below freezing in the first half of May. Then from June through November, much of the state was in a drought (averaged 86% of normal). Over the state, the average temperature in July, August, and September was 5.2 °F above normal. December ended the year with some southern tier and eastern NY areas getting record snowfall. Binghamton NY received more than 40 inches of snow Dec. 17th. Much of this snow melted by Dec. 25 causing some flooding.

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 August 2020, alfalfa and other forage trials were planted at Ithaca in Southern Tier NY. The alfalfa trials established well and have excellent stands for harvest from 2021 to 2023. The perennial grass trials were irrigated several times after seedling emergence and stands were good in the fall. The red clover trial and the annual ryegrass trial had poor stands and will be replanted in 2021.

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. Birdsfoot trefoil variety trials were not harvested in 2020.

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 27th and October 12th. Grass yields by species for production year trials harvested 2020 are listed in summary **Table 4, pages 8-10.**

Also listed is a visual estimate 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 2019 for the trials planted in 2017 and 2018 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 at harvest time and replicate samples at heading date. Forage quality estimates from 2020 for trials planted in 2018 and 2019 will be available late winter.

Table 7 (page 13) is a summary of grasses planted in 2020, and annual grass trial results.

See [2021 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 2021 will be emailed to past trial participants in late January 2021. The applications will also be posted to the web: <https://blogs.cornell.edu/varietytrials/forage/>

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2020

Table 1: NY Alfalfa Cultivar Yield Trial Results - 2020 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.

Summary of Conventional Alfalfa Cultivar Performance 2018 - 2020			
Cultivars (listed alphabetically)	Yielded in the Top 50% in the Trial(s)*		Total No. of harvests
	Avg. % of Cks	No. of harvests	
54Q14	125	9	18
54VQ52	116	12	18
55V50	115	18	18
AFX 429	117	9	9
BYS 5022	111	12	12
EZRA	105	9	18
F2F6C-418	115	6	6
F2F6C-418NC	112	6	6
FORTUNE	113	6	6
FSG 415 BR	113	18	18
GALAXY	119	9	18
HYBRIFORCE-4400	123	9	9
LUKAL	103	9	18
MAGNUM 8	110	9	9
MARINER V	118	3	3
ORGANIC VIKING 5200	106	3	6
PERSIST III	116	18	18
RED FALCON BR	116	3	3
REGEN	109	18	36
SW3407	117	12	15
SW4107	118	24	27
SW5210	116	21	21
VIKING 374HD	111	6	6
VIKING 394AP	112	6	6

*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 2020.

Cks. = Check Cultivars are Oneida VR, Vernal.

Alfalfa Entered as Experimental in Ithaca in 2017			
Cultivar/ Experimental	2020 Total (T/A)	3-Yr Total Season (T/A)	3 Yr % of Cks.
CW 104014*	4.91	15.22	113
AFX 460*	5.23	15.18	113

Trial, Seeding Year	Soil series, elevation, # of harvests in 2020
Ithaca, 2017	Bath and Valois, 1047 ft, 3 harvests
Geneva, 2017	Honeoye and Lima loam, 486 feet, 3 harvests
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, Tompkins County, Sown May 2017			
Cultivars	2020 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
SW3407	5.33	17.07	127
54Q14	5.44	16.79	125
HYBRIFORCE-4400	5.03	16.44	123
SW4107	5.22	16.32	122
55V50	4.78	16.28	121
GALAXY	5.21	15.98	119
AFX 429	5.35	15.76	117
FSG 415 BR	4.83	15.75	117
SW5210	5.08	15.75	117
LUKAL	4.77	14.95	111
REGEN	4.79	14.88	111
EZRA	4.21	14.17	106
ONEIDA VR	4.56	13.90	104
430RRLH	4.21	13.85	103
LUZELLE	4.06	13.48	100
VERNAL	4.34	12.93	96
SW 315LH	3.54	11.96	89
Mean	4.75	15.18	Ck. Mean 13.42
5% LSD	0.47	0.93	
CV (%)	7.9	4.8	

Geneva, Ontario County			
Sown May 2017			
Cultivars	2020 Total	3-Yr	
		Total Season	% of Cks.
- tons per acre dry matter -			
MAGNUM 8	5.56	18.10	110
55V50	5.47	17.95	109
FSG 415 BR	5.20	17.92	109
REGEN	4.69	17.67	108
EZRA	4.61	17.24	105
LUKAL	4.98	17.00	103
54Q14	5.07	16.83	102
ONEIDA VR	4.74	16.72	102
LUZELLE	4.53	16.70	102
GALAXY	5.21	16.29	99
VERNAL	4.46	16.15	98
SW 315LH	3.93	14.83	90
Mean	4.80	16.84	Ck. Mean 16.44
5% LSD	0.52	1.21	
CV (%)	6.5	4.3	

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2020 Forage Yields

Ithaca, Tompkins County Sown May 2018				Cobleskill, Schoharie County Sown May 2018			
Cultivars	2020 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 -			
PERSIST III	3.90	9.30	119	SW5210	5.62	11.35	120
SW4107	3.95	9.07	116	54VQ52	5.38	11.08	117
54VQ52	3.85	8.99	115	SW4107	5.32	10.95	115
REGEN	3.86	8.93	114	PERSIST III	5.15	10.88	115
FORTUNE	3.75	8.83	113	BYS 5022	5.39	10.56	111
BYS 5022	3.87	8.73	111	REGEN	4.72	10.24	108
SW5210	3.67	8.70	111	ONEIDA VR	4.68	10.23	108
PLUSS III	3.69	8.38	107	PLUSS III	5.01	10.06	106
GEMSTONE II	3.72	8.29	106	SW 315LH	3.93	8.84	93
AFX 460	3.74	8.22	105	VERNAL	4.01	8.74	92
ONEIDA VR	3.51	8.16	104				Ck. Mean
VERNAL	3.32	7.52	96	Mean	4.81	10.08	9.49
			Ck. Mean	5% LSD	0.32	0.61	
Mean	3.79	8.78	7.84	CV (%)	5.3	4.8	
5% LSD	0.19	0.43					
CV (%)	4.1	3.9					
Ithaca 2018 Experimentals							
AFX164046*	4.00	9.54	122	SW1517*	3.96	9.18	117
AFX164047*	4.06	9.53	122	SW1520*	3.75	8.84	113
AFX164048*	4.02	9.45	121				

Ithaca, Tompkins County Sown June 2019		
Cultivars	2020 Total	2020 % of Cks.
tons per acre		
PERSIST III	3.30	120
SW4107	3.26	118
MARINER V	3.24	118
VIKING 394AP	3.24	118
VIKING 374HD	3.21	117
F2F6C-418	3.19	116
RED FALCON BR	3.19	116
F2F6C-418NC	3.18	116
SW3407	3.17	115
54VQ52	3.15	115
WL 349HQ	3.07	112
REGEN	3.07	112
ONEIDA VR	2.91	106
SIGNATURE	2.89	105
ORGANIC VIKING 5200	2.72	99
VERNAL	2.58	94
		Ck. Mean
Mean	3.10	2.75
5% LSD	0.17	
CV (%)	4.3	

Aurora, Cayuga County Sown May 2019		
Cultivars	2020 Total	2020 % of Cks.
tons per acre		
F2F6C-418	3.12	115
PERSIST III	3.05	112
F2F6C-418NC	2.94	108
REGEN	2.90	107
SW3407	2.88	106
ORGANIC VIKING 5200	2.88	106
VIKING 394AP	2.86	105
VIKING 374HD	2.86	105
SW4107	2.81	103
54VQ52	2.75	101
SKYLARK	2.73	100
VERNAL	2.72	100
ONEIDA VR	2.71	100
WL 349HQ	2.64	97
		Ck Mean
Mean	2.81	2.72
5% LSD	0.23	
CV (%)	6.5	
Aurora 2019 Experimentals		
BY-4040*	3.04	112
BY-4028*	2.86	105
BY-4014*	2.29	85

Ithaca 2019 Experimentals (2020 Yield tons per acre, %)					
	Total	% of Cks.	Total	% of Cks.	
AFX174085*	3.46	126	154-SD-1*	3.17	115
AFX174083*	3.43	125	3510-FL-2*	3.16	115
BY-4040*	3.33	121	154-ANS*	3.11	113
3510-SD-1*	3.27	119	3510-FL-1*	3.08	112
154-FL-2*	3.26	119	AFX155025*	3.06	111
SW5511*	3.22	117	3510-ANS*	3.01	109
SW16XCA32*	3.20	116	BY-4028*	2.94	107
154-FL-1*	3.17	115	BY-4014*	2.67	97

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Table 1 (con't): NY Alfalfa Cultivar Yield Trial Results - 2020 Forage Yields

LSD = Least Significant Difference.

ROUNDUP READY ALFALFA TRIALS

Sown May 2017

Released And Experimental Varieties	2020 Total	3-Yr Total	% Trial Mean 3-Yr Total
- tons per acre dry matter -			
55VR08	5.33	17.78	108
6424R	5.24	17.36	105
DKA41-18RR	4.99	16.42	100
54HVX42	4.87	16.13	98
430RRLH	3.96	14.72	89
Mean	4.88	16.48	
5% LSD	0.49	1.24	
CV (%)	7.5	5.6	

Trials to Test Insect Resistant Experimental Alfalfa Populations for Yield and % Resistance to Root Feeding

	2019 Alfalfa Snout Beetle Trial	2020 Clover Root Curculio Trial
Avg. Yield (t/a) of Top Yield Entries based on LSD (0.05)		
Yield (High Group)	5.8 t/a	3.0 t/a
% Resistance	53%	74%
Avg. Yield (t/a) of Low Yield Entries based on LSD (0.05)		
Yield (Low Group)	5.2 t/a	2.6 t/a
% Resistance	48%	66%

t/a is tons per acre dry matter

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From the USDA National Institute of Food and Agriculture.

INSECT RESISTANT ALFALFA TRIALS; Sown Ithaca NY 2017 to 2020

Trials harvested 3 times per production year; 2017 trials on Williamson silt loam; 2018 trial on Lanford channery silt loam;

2019 trial on Langford channery silt loam.

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

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

PLH populations were at moderately high levels in 2020.

* Entered as Experimental Population

Sown May 2017

Released And Experimental Varieties	2020 Total	3-Yr Total	PLH Damage Score
-- tons per acre dry matter --			
55H94	4.76	17.01	1.0
N-R-GEE	4.75	16.32	3.8
SCIMITAR	4.39	16.06	1.3
430RRLH	4.51	15.54	1.1
VERNAL	4.62	14.56	3.6
SW 315LH	3.60	13.88	1.2
Mean	4.39	15.62	Damage Score:
LSD(.05)	0.44	1.40	1=none
CV(%)	7.7	6.9	5=severe

Sown May 2018

Released And Experimental Varieties	2020 Total	2-Yr Total	PLH Damage Score
-- tons per acre dry matter --			
FSG 421LH	3.85	9.79	1.0
SW 315LH	3.59	9.46	1.4
NRGEE	3.89	9.32	3.2
SCIMITAR*	3.63	8.89	1.8
ONEIDA VR	3.60	8.81	4.0
VERNAL	3.68	8.77	4.0
Mean	3.70	9.37	Damage Score:
LSD(.05)	0.25	0.63	1=none
CV(%)	5.3	5.2	5=severe

Sown May 2019

Released And Experimental Varieties	2020 Total t/a	PLH Damage Score
SCEPTER	3.90	1.0
SW 315LH	3.81	2.0
BLUEJAY 4HR	3.67	3.4
431RRLH	3.54	1.0
ONEIDA VR	3.30	4.0
VERNAL	3.05	4.2
NRGEE	3.02	4.4
PAOLA*	2.77	5.0
TRIADE*	2.76	5.0
GO-2018-FU*	2.74	2.9
Mean	3.35	Damage Score:
5% LSD	0.40	1=none
CV (%)	9.5	5=severe

Sown August 2020

Released And Experimental Varieties	NO HARVESTS 2020
55H96	PIONEER
BLUEBIRD	BLUE RIVER ORGANIC SEED
ONEIDA VR	check
SW16ZPD02*	S&W
VERNAL	check

ALFALFA CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2020

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	Disease Resistance Ratings*						Marketing Co.	
		FD	BW	VW	FW	AN	PRR	Phone Number	Web or E-mail Address
LUKAL	Albert Lea							800-352-5247	www.alseed.com
LUZELLE	Albert Lea								
ORGANIC VIKING 5200	Albert Lea	5	HR	HR	HR	HR	HR		
TRIAD	Albert Lea								
VIKING 374HD	Albert Lea	4	HR	HR	HR	HR	HR		
VIKING 394AP	Albert Lea	4	HR	HR	HR	HR	HR		
AFX 429	Alforex	4	HR	HR	HR	HR	HR	877-560-5181	www.alforexseeds.com
AFX 460	Alforex	4	HR	HR	HR	HR	HR		
BYS 5022	BrettYoung							800-665-5015	www.brettyoung.ca/
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
TOUCHSTONE EQ	Chemgro	4	HR	HR	HR	HR	HR		
HYBRIFORCE-4400	Dairyland Seed Co.	4	HR	HR	HR	HR	HR	800-236-0163	www.dairylandseed.com
MAGNUM 8	Dairyland Seed Co.	4	HR	HR	HR	HR	HR		
DKA41-18RR	Dekalb	4	HR	HR	HR	HR	HR	800-335-2676	www.monsanto.com
FORTUNE	DLF Pickseed	4	HR	HR	HR	HR	HR	800-445-2251	www.dlfs.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		
TRIADE	Interlake Forage Seeds	5	HR	HR	HR	HR	HR	800-990-1390	www.interlakeforageseeds.com
6424R	Nexgrow	4	HR	HR	HR	HR	HR	800-568-5424	www.plantnexgrow.com
54VQ52	Pioneer Hi-Bred	4	HR	HR	R	HR	HR	800-247-6803	www.pioneer.com
54HVX42	Pioneer Hi-Bred	4	HR	HR	HR	HR	R		
54Q14	Pioneer Hi-Bred	4	HR	HR	HR	HR	HR		
55H94	Pioneer Hi-Bred	5	HR	HR	HR	HR	HR		
55H96	Pioneer Hi-Bred	5	HR	R	HR	HR	HR		
55V50	Pioneer Hi-Bred	5	HR	HR	R	HR	HR		
55VR08	Pioneer Hi-Bred	5	R	HR	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
SW 315LH	Seedway	3	R	HR	MR	HR	R		
FSG 415BR	Seedway	4	HR	HR	HR	HR	HR		
FSG 421LH	Seedway	4	HR	HR	HR	HR	HR		
430RRLH	Seedway/ GROWMARK FS	4	HR	HR	HR	HR	HR	800-338-4769	www.fsseed.com
SW3407	S&W Seed Co.	3	HR	HR	HR	HR	HR	855-767-4486	www.swseedco.com
SW4107	S&W Seed Co.	4	HR	HR	HR	HR	HR		
SW5210	S&W Seed Co.	5	HR	HR	HR	HR	HR		
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-Anthracnose, Prr-Phytophthora root rot

Table 3: Red Clover Cultivar Yield Trials- 2020 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		2020			2019		2-Yr.	
RED CLOVER		Total	% of	% Stand	Total	% of	Total	% of Cks
Cultivar/Experimental	Marketing Company	Season	Cks.	16-Sep-20	Season	Cks.		
		T/A			T/A		T/A	
Freedom!	Barenbrug	3.25	141	56	5.81	108	9.06	118
Freedom! MR	Barenbrug	2.99	130	52	5.48	102	8.47	110
Blaze	Mountain View Seeds	2.88	125	54	5.53	103	8.41	109
Cinnamon Plus	check/Allied Seed, L.L.C.	2.55	110	42	5.39	99	7.95	103
Marathon	check	2.06	89	40	5.34	100	7.40	96
			Ck. Mean			Ck. Mean		Ck. Mean
	Trial Mean	2.60	2.31	49	5.45	5.37	8.05	7.68
	5% LSD	0.31		9	0.71		0.59	

Trial Means are for 10 entries.

Check varieties are Marathon and Cinnamon Plus.

Sown June 2019		2020		
RED CLOVER		Total	% of	% Stand
Cultivar/Experimental	Marketing Company	Season	Cks.	Sept. 10
		T/A		
Freedom!MR	Barenbrug	3.13	108	83
BAR TP11	Barenbrug	3.10	107	78
Cardinal 2	Blue River Organic Seed	3.01	104	82
Cinnamon Plus	check	2.92	101	84
BAR TP9	Barenbrug	2.90	100	82
GA-9908	Smith Seed Services	2.89	100	74
Marathon	check	2.86	99	82
	Trial Mean	2.79	Ck. Mean	74
	5% LSD	0.21	2.89	6

Overall means are for 14 trial entries.

Sown August 2020	Seeding Failure
RED CLOVER	To be replanted in 2021
Cultivar/Experimental	Marketing Company
BAR TP10	Barenbrug
Barduro	Barenbrug
Cinnamon Plus	check
CW040040	Barenbrug
CW30091	Barenbrug
Freedom!MR	Barenbrug
Marathon	check
Robust III	Columbia Seeds

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
DLF Pickseed USA Inc.	800-445-2251	www.dlfis.com/
Grassland Oregon	503-566-9900	www.grasslandoregon.com
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 - 2020

Table 4: 2020 Perennial Forage Grass Yield Summary

(T/A - tons per acre dry matter)

Ithaca, Tompkins Co., Sown 2017, 2018, 2019, 2020

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	2020			2019		2018		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	Total Season	Heading Date	
		T/A			T/A		T/A	T/A	
Orchardgrass		Sown May 18, 2017							
Potomac	check	2.33	60	22-May	4.40	18-May	5.87	20-May	12.60
OG 79	DLF Pickseed	2.31	58	23-May	4.39	20-May	5.78	25-May	12.48
Pennlate	check	2.29	65	23-May	4.42	18-May	5.69	20-May	12.41
OG 80	DLF Pickseed	1.93	48	23-May	4.37	20-May	5.68	30-May	11.98
Lukir	Albert Lea Seed	1.39	38	27-May	3.42	24-May	5.26	25-May	10.08
Captur	DLF Pickseed	1.50	40	29-May	3.67	26-May	4.90	25-May	10.08
Lucharm	Albert Lea Seed	1.41	38	27-May	3.62	26-May	4.86	30-May	9.89
	LSD(.05)	0.16	6		0.41		0.53		0.97
Orchardgrass		Sown May 18, 2018							
Pennlate	check	3.41	70	24-May	5.25	20-May			8.66
OG 88	DLF Pickseed	3.23	63	24-May	5.10	23-May			8.33
Bounty II	Allied/Seedway	3.29	65	22-May	5.00	20-May			8.29
Blizzard	Allied/Seedway	3.24	68	24-May	5.00	20-May			8.24
Potomac	check	2.99	70	22-May	4.71	20-May			7.70
OG 80	DLF Pickseed	2.62	55	27-May	4.50	26-May			7.11
Swante	Smith Seed	2.60	48	25-May	3.98	23-May			6.59
	LSD(.05)	0.35	6		0.57				0.84
Orchardgrass		Sown May 22, 2019							
Persist	Smith Seed Services	3.19	89	22-May					
Pennlate	check	3.12	90	24-May					
SEOGP2	Smith Seed Services	3.04	88	24-May					
Albert	OreGro	2.89	84	26-May					
DLFPS-OG 79	DLFPickseed	2.89	90	26-May					
Potomac	check	2.89	90	24-May					
DLFPS-OG 70	DLFPickseed	2.85	86	28-May					
DLFPS-OG 96	DLFPickseed	2.84	88	28-May					
Barlegro	Barenbrug	2.81	88	31-May					
Devour	MVS	2.76	88	28-May					
BAR DGLBLD	Barenbrug	2.66	88	29-May					
DLFPS-OG 80	DLFPickseed	2.65	83	28-May					
Bighorn	MVS	2.65	86	27-May					
Alpine II	MVS	2.57	85	31-May					
BAR DGL 48	Barenbrug	2.33	90	24-May					
	LSD(.05)	0.39	5						
Meadow Fescue		Sown May 18, 2017							
BAR FP 16058	Barenbrug	1.65	55	29-May	4.08	28-May	5.33	30-May	11.06
PRADEL	Barenbrug	1.26	60	29-May	3.78	26-May	5.27	27-May	10.31
SW Minto	Albert Lea Seed	1.50	63	27-May	3.64	26-May	5.05	27-May	10.19
Tored	Brett Young	1.37	58	27-May	3.79	26-May	4.91	27-May	10.08
Tetrex	check	1.17	53	28-May	3.55	26-May	4.49	27-May	9.22
	LSD(.05)	0.30	7		0.35		0.29		0.69
Meadow Fescue		Sown May 18, 2018							
BAR FP 17079	Barenbrug	2.52	70	30-May	4.86	30-May			7.38
BAR FPF 32	Barenbrug	2.31	60	29-May	4.35	28-May			6.66
SW Minto	Albert Lea Seed - check	2.20	63	29-May	4.44	26-May			6.64
Pradel	Barenbrug	2.16	50	29-May	4.42	26-May			6.58
	LSD(.05)	0.34	16		0.50				0.79
Meadow Fescue		Sown May 22, 2019							
BAR FPF79	Barenbrug	2.95	78	31-May					
Driftless	Barenbrug	2.93	73	29-May					
Pradel	check	2.81	81	28-May					
Pradel	Barenbrug	2.77	83	28-May					
BAR FPFBLD	Barenbrug	2.75	76	29-May					
	LSD(.05)	0.33	8						

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2020

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Table 4 (con't.) 2020 Perennial Forage Grass Yield Summary (T/A - tons per acre dry matter)

Ithaca, Tompkins Co., Sown 2017, 2018, 2019, 2020

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	2020			2019		2018		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	Total Season	Heading Date	
		T/A			T/A		T/A	T/A	
Tall Fescue		Sown May 18, 2017							
HHG32	Healthy Herdd	2.23	68	23-May	5.27	21-May	7.69	25-May	15.19
FTF 89	DLF Pickseed	2.14	68	25-May	4.76	21-May	7.29	25-May	14.19
Dominate	Seedway	2.25	60	23-May	4.88	21-May	6.83	23-May	13.95
FTF 84	DLF Pickseed	1.88	68	23-May	4.70	20-May	6.86	25-May	13.44
Pastoral	MVS	1.63	63	22-May	4.59	18-May	6.80	17-May	13.02
Florine	Albert Lea Seed	1.93	58	25-May	4.47	23-May	6.57	27-May	12.98
Swaj	Brett Young	2.21	55	25-May	4.86	23-May	5.77	30-May	12.85
PPG-FTF-112	MVS	1.81	63	23-May	4.38	24-May	6.43	27-May	12.62
KY 31+	Check	2.00	63	25-May	4.40	23-May	5.52	27-May	11.92
Softane	DLF Pickseed	1.67	60	27-May	4.00	24-May	6.23	27-May	11.91
	LSD(.05)	0.26	9		0.81		0.39		1.32
Tall Fescue		Sown May 18, 2018							
KY 31+	check	3.18	80	27-May	5.60	24-May			8.78
FTF 95	DLF Pickseed	3.07	80	27-May	5.05	24-May			8.12
FTF 96	DLF Pickseed	2.97	80	27-May	5.06	26-May			8.03
BAR FAF 17135	Barenbrug	2.89	78	29-May	5.12	30-May			8.02
Ranchero	Smith Seed	3.01	78	24-May	4.83	23-May			7.84
BarElite	Barenbrug	2.77	78	29-May	5.02	30-May			7.79
BAR FAF 17137	Barenbrug	2.81	83	29-May	4.94	30-May			7.75
Bariane	Barenbrug	2.77	78	30-May	4.65	2-Jun			7.42
7FACF82	Barenbrug	2.37	78	30-May	4.71	2-Jun			7.08
	LSD(.05)	0.31	6		0.35				0.54
Tall Fescue		Sown May 22, 2019							
K-32	OreGro Seeds	4.03	75	25-May					
Velvet	OreGro Seeds	3.64	80	28-May					
BAR FABLD	Barenbrug	3.52	83	29-May					
Bariane	Barenbrug	3.40	83	31-May					
Armory	Barenbrug	3.40	83	28-May					
PST-5SLF	Pure Seed Testing	2.87	83	31-May					
KY 31+	check	2.47	74	28-May					
	LSD(.05)	0.41	9						
Festulolium		Sown May 18, 2018							
FPF 2	DLF Pickseed	3.26	75	24-May	5.44	23-May			8.70
Fojtan	DLF Pickseed	3.00	80	26-May	5.17	26-May			8.18
Hipast	DLF Pickseed	2.89	70	29-May	4.93	2-Jun			7.82
Spring Green	check	2.13	65	31-May	4.90	26-May			7.03
	LSD(.05)	0.18	8		0.24				0.35
Festulolium and M. Fescue		Sown May 22, 2019							
DLFPS-FPF 6	DLFPickseed	3.66	80	28-May					
DLFPS-FPF 5	DLFPickseed	3.56	84	28-May					
Hipast	DLFPickseed	3.40	79	1-Jun					
Fojtan	DLFPickseed	3.40	81	28-May					
Spring Green	check	2.92	70	28-May					
Petrarca, M.Fescue	DLFPickseed	2.84	74	28-May					
Merifesc, M.Fescue	DLFPickseed	2.65	71	28-May					
ORRUS	OreGro	2.64	69	4-Jun					
	LSD(.05)	0.45	8						

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2020

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Table 4 (con't.) 2020 Perennial Forage Grass Yield Summary (T/A - tons per acre dry matter)

Ithaca, Tompkins Co., Sown 2017, 2018, 2019, 2020

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	2020			2019		2018		2 or 3 Yr Yield
		Total Season	% Stand Oct./Nov.	Heading Date	Total Season	Heading Date	Total Season	Heading Date	
		T/A			T/A		T/A	T/A	
Perennial Ryegrass and Festulolium		Sown May 18, 2017							
FPF2 (festulolium)	DLF Pickseed	2.40	63	23-May	5.39	20-May	6.98	21-May	14.77
Federo (festulolium)	Albert Lea Seed	1.66	43	29-May	4.17	28-May	5.76	27-May	11.60
Spring Green (festulolium)	check	1.68	60	29-May	3.47	26-May	5.23	27-May	10.38
REMINGTON	Barenbrug	1.43	65	9-Jun	3.45	10-Jun	5.35	3-Jun	10.22
Elena	Seedway	1.60	58	29-May	3.51	31-May	4.92	30-May	10.03
RAD-MFP141	Allied Seed, LLC	1.45	60	29-May	3.26	31-May	5.26	30-May	9.96
BAR LP 16237	Barenbrug	1.33	60	9-Jun	3.41	10-Jun	5.16	3-Jun	9.91
Calibra	Check	1.17	60	29-May	3.02	31-May	4.89	30-May	9.08
Linn	Check	1.16	50	25-May	3.01	20-May	4.71	21-May	8.87
BAR LP 16238	Barenbrug	1.04	60	29-May	2.81	26-May	4.54	27-May	8.40
Tomaso	Albert Lea Seed	0.92	55	9-Jun	2.76	10-Jun	4.01	3-Jun	7.70
	LSD(.05)	0.26	8		0.47		0.35		0.86
Perennial Ryegrass		Sown May 18, 2018							
Elena	Seedway	2.07	58	4-Jun	4.88	6-Jun			6.94
Tetragain SLT	Pure Seed Testing	2.02	58	4-Jun	4.77	2-Jun			6.79
ROM99	Barenbrug	1.74	70	9-Jun	4.75	10-Jun			6.49
Remington	Barenbrug	1.64	73	9-Jun	4.42	10-Jun			6.06
Linn	check	1.82	48	24-May	4.09	21-May			5.91
Calibra	check	1.58	60	4-Jun	4.12	2-Jun			5.71
BAR LP 17253	Barenbrug	1.61	65	9-Jun	3.83	10-Jun			5.44
PST-07S-95 (Tirem)	Pure Seed	1.44	55	22-May	3.25	18-May			4.69
	LSD(.05)	0.24	12		0.60				0.77
Perennial Ryegrass		Sown May 22, 2019							
Tetragain SLT	Pure Seed Testing	2.07	73	29-May					
Boost	OreGro	2.00	71	28-May					
PI2B2	OreGro	1.66	81	31-May					
Calibra	check	1.65	78	4-Jun					
Tribal	BrettYoung	1.52	83	1-Jun					
Linn	check	1.47	78	26-May					
	LSD(.05)	0.29	6						
Timothy		Sown May 18, 2017							
KY-Early	Smith Seed	2.50	65	27-May	4.55	28-May	5.67	30-May	12.73
Carson	MVS	2.63	65	29-May	4.62	31-May	5.26	3-Jun	12.51
Rakel	Brett Young	2.17	63	9-Jun	3.84	7-Jun	4.90	9-Jun	10.91
Climax	check	2.19	63	9-Jun	3.85	10-Jun	4.76	8-Jun	10.81
TRYGGVE	Preferred Seed	1.99	65	10-Jun	3.95	10-Jun	4.46	9-Jun	10.40
	LSD(.05)	0.17	8		0.49		0.27		0.77

PERENNIAL FORAGE GRASS CULTIVAR YIELD TRIAL SUMMARY - NEW YORK - 2020

Perennial Forage Grass Varieties - 2019 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 2020 will be analyzed and reported on in 2021.

Table 5: Spring Forage Quality Data for Grass Varieties (2019 Trial Samples)

Trial Sown 2018 Boot Stage in 2019				Trial Sown 2017 Boot Stage in 2019			
	Date at Boot Stage	% NDF	% NDFD		Date at Boot Stage	% NDF	% NDFD
Perennial Ryegrass				Perennial Ryegrass and Festulolium			
Linn	21-May	44	83	FPF2 (festulolium)	20-May	52	75
Tetragain SLT	2-Jun	52	81	Linn	20-May	49	77
Calibra	2-Jun	43	87	Spring Green (festulolium)	26-May	46	79
Elena	6-Jun	43	89	BAR LP 16238	26-May	46	80
BAR LP 17253	10-Jun	44	85	Federo (festulolium)	28-May	45	81
ROM99	10-Jun	36	90	RAD-MFP141	31-May	48	79
Remington	10-Jun	35	88	Elena	31-May	52	78
				Calibra	31-May	44	83
				Tomaso	10-Jun	50	78
Kentucky Bluegrass				BAR LP 16237	10-Jun	50	79
PST-07S-95 (Tirem)	18-May	44	80	REMINGTON	10-Jun	51	80
Tall Fescue				Tall Fescue			
Ranchero	23-May	48	75	Pastoral	18-May	49	70
FTF 95	24-May	47	74	FTF 84	20-May	51	74
KY 31+	24-May	45	76	HHG32	21-May	52	71
FTF 96	26-May	48	73	Dominate	21-May	54	70
BAR FAF 17135	30-May	46	74	FTF 89	21-May	53	71
BAR FAF 17137	30-May	47	75	Florine	23-May	55	72
BarElite	30-May	45	76	Swaj	23-May	49	75
7FACF82	2-Jun	47	73	KY 31+	23-May	54	72
Bariane	2-Jun	52	72	PPG-FTF-112	24-May	53	70
				Softane	24-May	55	71
Meadow Fescue				Meadow Fescue			
Pradel	26-May	43	84	SW Minto	26-May	55	77
SW Minto	26-May	45	84	Tored	26-May	56	76
BAR FPF 32	28-May	47	83	PRADEL	26-May	56	75
BAR FP 17079	30-May	45	83	Tetrax	26-May	54	77
				BAR FP 16058	28-May	59	77
Orchardgrass				Orchardgrass			
Bounty II	20-May	55	76	Potomac	18-May	56	74
Blizzard	20-May	56	76	Pennlate	18-May	57	73
Potomac	20-May	51	78	OG 79	20-May	59	75
Pennlate	20-May	54	78	OG 80	20-May	58	76
Swante	23-May	48	83	Lukir	24-May	58	77
OG 88	23-May	52	81	Lucharm	26-May	60	76
OG 80	26-May	51	81	Captur	26-May	62	75
Festulolium				Timothy			
FPF 2	23-May	46	77	KY-Early	28-May	67	68
Fojtan	26-May	45	79	Carson	31-May	66	71
Spring Green	26-May	43	85	Rakel	7-Jun	73	66
Hipast	2-Jun	51	76	TRYGGVE	10-Jun	70	68
				Climax	10-Jun	72	67

Perennial Forage Grass Varieties - 2019 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 2020 will analyzed and forage quality reported in 2021.

Table 6: 2019 Spring, First Harvest Forage Quality Data for Grass Varieties

	Trial Sown 2018						Trial Sown 2017				
	First Harvest in 2019-June 4			% Seed Heads at Harvest 2	2019 Aftermath Forage Yield (t/a)		First Harvest in 2019-June 4			% Seed Heads at Harvest 2	2019 Aftermath Forage Yield (t/a)
	Yield (t/a) Harvest 1	% NDF	% NDFD				Yield (t/a) Harvest 1	% NDF	% NDFD		
Perennial Ryegrass						Perennial Ryegrass and Festulolium					
Linn	2.05	49	78	0	2.04	FPF2 (festulolium)	2.01	58	69	0	3.38
Tetragain SLT	2.12	49	81	48	2.65	Linn	1.53	56	74	25	1.48
Calibra	1.57	37	86	15	2.55	Spring Green (festulolium)	1.29	50	78	70	2.18
Elena	1.87	41	85	63	3.01	BAR LP 16238	0.86	51	80	73	1.95
BAR LP 17253	1.27	36	84	10	2.56	Federo (festulolium)	1.25	49	77	85	2.92
ROM99	1.72	35	86	10	3.03	RAD-MFP141	1.32	45	79	68	1.94
Remington	1.57	36	84	3	2.85	Elena	1.38	52	77	80	2.13
						Calibra	1.15	45	81	48	1.87
						Tomaso	0.67	43	80	88	2.09
Kentucky Bluegrass						BAR LP 16237	1.34	43	83	65	2.07
PST-07S-95 (Tirem)	1.31	56	74	0	1.94	Remington	1.20	45	82	65	2.25
Tall Fescue						Tall Fescue					
Ranchero	1.23	51	72	0	3.60	Pastoral	1.65	60	67	0	2.94
FTF 95	1.28	52	70	0	3.77	FTF 84	1.79	58	69	0	2.91
KY 31+	1.43	49	72	0	4.17	HHG32	2.14	60	68	0	3.13
FTF 96	1.25	50	70	0	3.81	Dominate	1.69	62	66	0	3.19
BAR FAF 17135	1.23	48	72	0	3.89	FTF 89	1.70	63	68	0	3.06
BAR FAF 17137	1.10	46	73	0	3.84	Florine	1.19	60	69	0	3.28
BarElite	1.33	48	74	0	3.69	Swaj	1.70	53	73	0	3.16
7FACF82	1.05	46	74	0	3.66	KY 31+	1.62	61	69	0	2.78
Bariane	1.03	47	74	0	3.62	PPG-FTF-112	1.51	57	69	0	2.87
						Softane	1.14	57	68	0	2.86
Meadow Fescue						Meadow Fescue					
Pradel	1.12	43	81	0	3.30	SW Minto	1.54	56	77	0	2.10
SW Minto	1.26	50	82	0	3.18	Tored	1.53	60	75	0	2.26
BAR FPF 32	1.09	50	81	0	3.26	Pradel	1.46	53	76	0	2.32
BAR FP 17079	1.29	48	79	0	3.57	Tetrax	1.72	56	76	0	1.83
						BAR FP 16058	1.68	57	77	0	2.40
Orchardgrass						Orchardgrass					
Bounty II	1.28	63	75	0	3.72	Potomac	1.48	68	69	0	2.92
Blizzard	1.44	68	69	0	3.56	Pennlate	1.60	69	70	0	2.82
Potomac	1.08	65	73	0	3.63	OG 79	1.27	64	73	0	3.12
Pennlate	1.47	66	74	0	3.78	OG 80	0.98	65	73	0	3.39
Swante	0.83	60	75	0	3.15	Lukir	0.45	60	75	0	2.97
OG 88	1.09	69	70	0	4.01	Lucharm	0.55	63	75	0	3.07
OG 80	0.75	64	73	0	3.75	Captur	0.59	66	74	0	3.08
Festulolium						Timothy					
FPF 2	1.57	48	74	0	3.87	KY-Early	2.53	69	68	0	2.02
Fojtan	1.54	48	75	0	3.63	Carson	2.60	67	73	0	2.02
Spring Green	2.16	41	86	50	2.74	Rakel	2.12	64	73	0	1.72
Hipast	1.26	45	77	0	3.67	TRYGGVE	2.10	59	77	0	1.85
						Climax	2.02	64	75	0	1.83

Table 7: Perennial Cool Season Grass Trials Sown on August 10, 2020.

2020 Perennial Grass Trials - No harvests in 2020

Variety	Marketing Co.	Variety	Marketing Co.
Orchardgrass		Meadow Fescue	
Ammo	Barenbrug	BAR FP 2044	Barenbrug
BAR DGLF 2094	Barenbrug	Driftless	Barenbrug
BAR DGLF 2095	Barenbrug	BAR FPF 77-2	Barenbrug
Intensiv	Barenbrug	BAR81d	Barenbrug
OG 96	DLF Pickseed	BAR FPF 82	Barenbrug
OG 80	DLF Pickseed	Pradel	Barenbrug
Harvestar	Columbia Seeds	Pradel	check
Pennlate	check	Per. Ryegrass	
Potomac	check	Remington	Barenbrug
Timothy		Remington NEA2	Barenbrug
PolarKing	BrettYoung	TetraSweet	MVS
Baronaise	Barenbrug	Calibra	check
Barfleo	Barenbrug	Linn	check
Climax	check	Spring Green	check
Tall Fescue, con't right-->		Tall Fescue	
BAR FA 9125	Barenbrug	Armory	Barenbrug
BAR FAF 135	Barenbrug	Bariane	Barenbrug
BAR FAF 137	Barenbrug	Aprilia	BrettYoung
BAR FAF 146	Barenbrug	KY 31+	check
BAR FAFL 239	Barenbrug	FTF 118	DLF Pickseed
7 FACF 82	Barenbrug	FTF 119	DLF Pickseed

Variety	Marketing Company	Yield 2020	%Stand 2020	Yield 2019
Annual Grasses	Sown May 22, 2019	T/A		T/A
Frostproof	Smith Seed Services	1.36	20	1.92
Meltop	Smith Seed Services	2.04	60	1.14
Winterhawk	OreGro	1.52	20	1.59
Meroa	Smith Seed Services	1.84	30	1.11
Feast II	check	0.86	40	1.72
	LSD(.05)	0.18	11	0.23

Company - Grasses	Phone	Web address	Company - Grasses	Phone	Web address
Albert Lea Seeds	800-352-5247	www.aiseed.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.dlfs.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 - 2020 Cooperators and Cornell Student Research Assistants and Seasonal Employees.

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Index for 2020 Yield Trial Report

Crop	Pages	Crop	Pages	Crop	Pages	Crop	Pages
Alfalfa		Alfalfa		Orchardgrass		Red Clover	
154-ANS*	4	SCEPTER	5,6	Albert	8	BAR TP10	7
154-FL-1*	4	SCIMITAR	5,6	Alpine II	8	BAR TP11	7
154-FL-2*	4	SIGNATURE	4,6	Ammo	13	BAR TP9	7
154-SD-1*	4	SKYLARK	4,6	BAR DGLBLD	8	Barduro	7
3510-ANS*	4	SW 315LH	3,4,5,6	BAR DGLF 2094	13	Blaze	7
3510-FL-1*	4	SW1517*	4	BAR DGLF 2095	13	Cardinal 2	7
3510-FL-2*	4	SW1520*	4	BAR DGL 48	8	Cinnamon Plus	7
3510-SD-1*	4	SW16XCA32*	4	Barlegro	8	CW040040	7
430RRLH	3,5,6	SW16ZPD02*	5	Bighorn	8	CW30091	7
431RRLH	5,6	SW3407	3,4,6	Blizzard	8,11,12	Freedom!	7
54HVX42	5,6	SW4107	3,4,6	Bounty II	8,11,12	Freedom! MR	7
54Q14	3,6	SW5210	3,4,6	Captur	8,11,12	GA-9908	7
54VQ52	3,4,6	SW5511*	4	Devour	8	Marathon	7
55H94	5,6	TOUCHSTONE EQ	6	DLFPS-OG 70	8	Robust III	7
55H96	5,6	TRIAD	6	DLFPS-OG 79	8		
55V50	3,6	TRIADE	6	DLFPS-OG 80	8	Tall Fescue	
55VR08	5,6	TRIADE*	5	DLFPS-OG 96	8	7 FACF 82	9,11,12,13
6424R	5,6	VERNAL	3,4,5	Harvestar	13	Aprilia	13
AFX 429	3,6	VIKING 374HD	3,4,6	Intensiv	13	Armory	9,13
AFX 460	3,4,6	VIKING 394AP	3,4,6	Lucharm	8,11,12	BAR FA 9125	13
AFX155025*	4	WL 349HQ	4,6	Lukir	8,11,12	BAR FABLD	9
AFX164046*	4			OG 79	8,11,12	BAR FAF 135	13
AFX164047*	4	Annual Grasses		OG 80	8,11,12,13	BAR FAF 137	13
AFX164048*	4	Feast II	13	OG 88	8,11,12	BAR FAF 146	13
AFX174083*	4	Frostproof	13	OG 96	13	BAR FAF 17135	9,11,12
AFX174085*	4	Meltop	13	Pennlate	8,11,12,13	BAR FAF 17137	9,11,12
BLUEBIRD	5,6	Meroa	13	Persist	8	BAR FAFL 239	13
BLUEJAY 4HR	5,6	Winterhawk	13	Potomac	8,11,12,13	BarElite	9,11,12
BY-4014*	4			SEOGP2	8	Bariane	9,11,12,13
BY-4028*	4	Festulolium		Swante	8,11,12	Dominate	9,11,12
BY-4040*	4	DLFPS-FPF 5	9			Florine	9,11,12
BYS 5022	3,4,6	DLFPS-FPF 6	9	Perennial Ryegrass		FTF 118	13
CW 104014*	3	Fojtan	9,11,12	BAR LP 16237	10,11,12	FTF 119	13
DKA41-18RR	5,6	FPF 2	9,11,12	BAR LP 16238	10,11,12	FTF 84	9,11,12
EZRA	3	Hipast	9,11,12	BAR LP 17253	10,11,12	FTF 89	9,11,12
F2F6C-418	3,4,6	ORRUS	9	Boost	10	FTF 95	9,11,12
F2F6C-418NC	3,4,6	Spring Green	9,11,12	Calibra	10,11,12,13	FTF 96	9,11,12
FORTUNE	3,4,6			Elena	10,11,12	HHG32	9,11,12
FSG 415 BR	3,6	Meadow Fescue		Federo	10,11,12	K-32	9
FSG 421LH	5,6	BAR FP 16058	8,11,12	FPF2	10,11,12	KY 31+	9,11,12,13
GALAXY	3	BAR FP 17079	8,11,12	Linn	10,11,12,13	Pastoral	9,11,12
GEMSTONE II	4,6	BAR FP 2044	13	PI2B2	10	PPG-FTF-112	9,11,12
GO-2018-FU*	5	BAR FPF 32	8,11,12	Tetragain SLT	10,11,12	PST-5SLF	9
HYBRIFORCE-4400	3,6	BAR FPF 77-2	13	RAD-MFP141	10,11,12	Ranchero	9,11,12
LUKAL	3,6	BAR FPF 82	13	REMINGTON	10,11,12,13	Softane	9,11,12
LUZELLE	3,6	BAR FPF79	8	Remington NEA2	13	Swaj	9,11,12
MAGNUM 8	3,6	BAR FPFBLD	8	ROM99	10,11,12	Velvet	9
MARINER V	3,4,6	BAR81d	13	Spring Green	10,11,12,13		
NRGEE	5	Driftless	8,13	TetraSweet	13	Timothy	
ONEIDA VR	3,4,5	Merifest	9	Tomaso	10,11,12	Barlefo	13
ORGANIC VIKING 5200	3,4,6	Petrarca	9	Tribal	10	Baronaise	13
PAOLA*	5	PRADEL	8,11,12,13			Carson	10,11,12
PERSIST III	3,4,6	SW Minto	8,11,12			Climax	10,11,12,13
PLUSS III	4,6	Tetrax	8,11,12			KY-Early	10,11,12
RED FALCON BR	3,4,6	Tored	8,11,12			PolarKing	13
REGEN	3,4,6					Rakel	10,11,12
		Kentucky Bluegrass				TRYGGVE	10,11,12
		PST-07S-95 (Tirem)	10,11,12				