

2022 Yield Results of New York Alfalfa Cultivar Trials; Cornell University;

Trials Planted in 2019, 2020 and 2021

School of Integrative Plant Science, Plant Breeding and Genetics Section

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Ithaca, South Central New York USDA Plant Hardiness Zone 5b	New York Locations Other than Ithaca
2019 Commercial and Experimental Seeding 2019 No Insecticide Seeding	Aurora, Central New York, USDA Plant Hardiness Zone 6a 2019 Commercial and Experimental Seeding
2020 Commercial and Experimental Seeding 2020 Roundup Ready Seeding 2020 No Insecticide Seeding	
2021 Commercial and Experimental Seeding 2021 No Insecticide Seeding (Replanted in 2022)	
2022 Commercial and Experimental Seeding 2022 No Insecticide Seeding	

Web Link to Cornell Forage Yield Trials reports and applications:

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

Web Link to Cornell Field Crops Events including field days at Ithaca:

<https://cals.cornell.edu/field-crops/about/news-events>

Alfalfa Trial Protocol and Notes:

Alfalfa and other forage trials are planted in New York each spring. Trials planted in Ithaca NY on the Cornell University Agricultural Experiment Station each year are to test conventional trial entries (cultivars and experimental populations), roundup ready trial entries, and insect resistant entries. A field day is held in Ithaca each year either just before or just after July 4th (<https://cals.cornell.edu/field-crops/about/news-events>). Conventional entry trials have also been planted at a second location away from Ithaca. These locations have been on Cornell University Agricultural Experiment Stations Farms, commercial farms, at State University of New York College farms, or at William H. Miner Institute Agricultural Research Institute in Northern New York.

Trials are seeded with a 6 row seeder and harvested with a Carter Harvester with a 1 meter cutting width head. The trials are planted in randomized complete block designs if the number of trial entries are 8 or less. If there are 9 or more trial entries, then the trial design is an incomplete block design. All trials are planted with five replicates. Trials are harvested 3 or 4 times each year. At each harvest, one third to one fifth of the plots are sampled for dry matter determination. A digital hanging scale is used to measure plot weights. A portable platform scale is used to weigh the samples taken for dry matter determination. Samples are oven dried for 7 days at 55 degrees C.

Forage cultivar trial applications and summaries are found at: <https://blogs.cornell.edu/varietytrials/forage/>

2022 Notes: Trials planted in 2019, 2020 and 2021 successfully overwintered in spite of a challengingly wet year in 2021. New alfalfa plot seedings were planted in mid-May rather than in late-April/early-May due delayed field work in fall 2021. Following the summer of 2021 when it was quite rainy, the summer of 2022 was low in precipitation from March through the end of July. From March 2022 to July 2022, the average precipitation per month was 2.6 inches compared to a normal of 3.5 inches per month. Also, July, August, and September averaged 66.7 degrees F or 1.2 degrees F higher than normal. Forage yields were lower than normal in 2022 due to low rainfall. Thanks to the harvesting crew: Jesse Chavez, Ryan Crawford, Gabriel Sanchez, Jamie Crawford, Abby Nonnenberg, Anna McGrade, Logan Gibbs-Porter, Leo Pieples, Miguel Barrera and CUAES CAF and Musgrave Farm Crews, including Farm managers Gene Sczepanski and Paul Stachowski.

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2022 New York Alfalfa Yield Trials

Cornell U. Agricultural Experiment Station, Tompkins Co., Ithaca, NY

Sown June 2019

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)			2022 Total t/a	2021 Total t/a	2020 Total t/a	3-Yr. Total (t/a)	% Stand 7-Nov-22	% of Checks Mean	
	17-Jun	29-Jul	14-Sep						2022 Total	3-Yr. Total
AFX174083*	1.75	0.77	1.12	3.65	4.63	3.43	11.73	80	145	132
FSG 420BR*	1.56	0.81	1.05	3.43	4.65	3.46	11.53	77	137	129
3510-SD-1*	1.71	0.82	1.02	3.56	4.47	3.27	11.34	78	142	127
RELOAD*	1.72	0.82	1.03	3.57	4.42	3.33	11.29	82	142	127
154-FL-2*	1.70	0.82	1.00	3.52	4.43	3.26	11.20	83	140	126
VIKING 394AP	1.67	0.81	1.06	3.54	4.35	3.24	11.13	81	141	125
SW4107	1.65	0.77	0.93	3.34	4.50	3.26	11.11	80	133	125
PERSIST III	1.68	0.76	0.96	3.41	4.38	3.30	11.09	76	136	124
SW3407	1.69	0.78	0.97	3.44	4.44	3.17	11.05	80	137	124
MARINER V	1.59	0.76	0.98	3.32	4.41	3.24	11.03	81	132	124
154-SD-1*	1.61	0.79	0.98	3.38	4.41	3.17	10.98	81	135	123
VIKING 374HD	1.65	0.83	1.06	3.54	4.18	3.21	10.95	82	141	123
154-FL-1*	1.63	0.80	1.00	3.42	4.33	3.17	10.95	84	136	123
3510-FL-1*	1.68	0.80	1.01	3.47	4.35	3.08	10.91	83	138	122
3510-FL-2*	1.63	0.76	1.05	3.44	4.31	3.16	10.89	80	137	122
F2F6C-418	1.66	0.76	0.93	3.35	4.33	3.19	10.87	71	133	122
154-ANS*	1.60	0.79	1.01	3.41	4.28	3.11	10.82	80	136	121
SW5511*	1.60	0.76	0.94	3.31	4.28	3.22	10.81	83	132	121
REGEN	1.47	0.69	1.00	3.16	4.44	3.07	10.73	73	126	120
54VQ52	1.58	0.69	0.91	3.18	4.37	3.15	10.70	80	127	120
RED FALCON BR	1.68	0.68	0.83	3.18	4.30	3.19	10.65	75	127	119
SW16XCA32*	1.57	0.74	0.95	3.26	4.18	3.20	10.62	80	130	119
3510-ANS*	1.65	0.80	1.00	3.45	4.17	3.01	10.58	81	138	119
WL 349HQ	1.55	0.77	0.96	3.27	4.21	3.07	10.55	83	130	118
QUICKGOLD*	1.52	0.76	0.90	3.18	4.21	3.06	10.45	78	127	117
F2F6C-418NC	1.53	0.67	0.79	3.00	4.22	3.18	10.39	75	120	116
SIGNATURE	1.44	0.73	0.94	3.11	3.92	2.89	9.95	81	124	112
BARRICADE II*	1.35	0.68	0.95	2.98	3.78	2.94	9.71	75	119	109
ONEIDA VR	1.37	0.59	0.79	2.76	3.96	2.91	9.60	74	110	108
ACE*	1.48	0.65	0.64	2.77	4.06	2.67	9.47	78	110	106
ORGANIC VIKING 5200	1.13	0.58	0.90	2.60	3.44	2.72	8.73	68	104	98
VERNAL	1.14	0.39	0.72	2.25	3.40	2.58	8.23	50	89	92
Mean	1.56	0.72	0.94	3.22	4.23	3.10	10.55	76	Ck. Mean 2.51	Ck. Mean 8.92
5% LSD	0.16	0.08	0.11	0.28	0.33	0.17	0.60	7		
CV (%)	8.4	8.4	9.2	6.9	6.1	4.3	4.6	7.0		

^Variety means are LSMEANS derived from incomplete block statistical analysis. Therefore, season or multiple-year totals will not be the arithmetic sum of individual cuts or years, respectively.

Alfalfa Check Cultivars are VERNAL, ONEIDA VR

*EXPERIMENTAL ENTRIES

Overall means are for 36 trial entries.

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2022 New York Alfalfa Yield Trials

Cornell U. Agricultural Experiment Station, Cayuga Co., Aurora, NY

Sown June 2019

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)			2022 Total t/a	2021 Total t/a	2020 Total t/a	3-Yr. Total (t/a)	% Stand 20-Jun-22	% of Checks Mean	
	7-Jun	19-Jul	21-Sep						2022 Total	3-Yr. Total
F2F6C-418	1.20	0.49	0.61	2.30	4.87	3.12	10.28	83	126	116
PERSIST III	1.13	0.47	0.60	2.19	4.76	3.05	10.00	82	120	112
RELOAD*	1.08	0.46	0.59	2.14	4.64	3.04	9.83	84	117	110
F2F6C-418NC	1.08	0.47	0.55	2.10	4.75	2.94	9.80	81	115	110
REGEN	1.09	0.42	0.55	2.06	4.82	2.90	9.79	83	113	110
VIKING 394AP	1.08	0.48	0.58	2.14	4.70	2.86	9.70	85	117	109
SW3407	1.09	0.46	0.52	2.06	4.55	2.88	9.49	85	113	107
SW4107	1.08	0.47	0.54	2.11	4.56	2.81	9.46	83	116	106
VIKING 374HD	1.07	0.53	0.58	2.19	4.38	2.86	9.42	84	120	106
ORGANIC VIKING 5200	1.07	0.53	0.61	2.21	4.23	2.88	9.33	80	122	105
BARRICADE II*	0.99	0.44	0.60	2.03	4.44	2.86	9.33	78	111	105
54VQ52	1.03	0.46	0.54	2.04	4.46	2.75	9.25	84	112	104
SKYLARK	0.98	0.37	0.54	1.87	4.49	2.73	9.08	75	103	102
WL 349HQ	1.08	0.48	0.53	2.09	4.23	2.64	8.96	81	115	101
ONEIDA VR	0.96	0.34	0.51	1.81	4.42	2.71	8.94	80	100	101
VERNAL	0.96	0.31	0.57	1.83	4.32	2.72	8.86	82	101	100
ACE*	1.06	0.43	0.52	2.01	4.11	2.29	8.42	80	111	95
Mean	1.04	0.43	0.55	2.01	4.48	2.81	9.3	81	1.82	8.90
5% LSD	0.10	0.06	0.05	0.18	0.27	0.23	0.59	4		
CV (%)	7.8	11.0	7.7	7.1	4.7	6.5	5.0	3.9		

^Variety means are LSMEANS derived from incomplete block statistical analysis. Therefore, season or multiple-year totals will not be the arithmetic sum of individual cuts or years, respectively.

Alfalfa Check Cultivars are VERNAL, ONEIDA VR

*EXPERIMENTAL ENTRIES

Overall means are for 21 trial entries.

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2022 New York Alfalfa Yield Trials

Cornell U. Agricultural Experiment Station, Tompkins Co., Ithaca, NY

Sown August 2020

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)			2022 Total t/a	2021 Total t/a	2-Yr. Total t/a	% Stand 12-Sep-22	% of Checks Mean	
	1-Jun	6-Jul	25-Aug					2022 Total	2-Yr. Total
SW5520Y	1.68	1.28	1.32	4.29	5.19	9.48	94	144	133
FSG 420BR*	1.61	1.16	1.28	4.06	5.41	9.48	93	136	133
SW5509	1.63	1.29	1.31	4.22	5.18	9.42	94	142	133
SW3407	1.58	1.26	1.30	4.13	5.28	9.40	92	139	132
AFX174084*	1.53	1.18	1.27	3.97	5.29	9.26	93	133	130
SW4506	1.66	1.18	1.20	4.05	5.18	9.25	94	136	130
SW4513	1.52	1.18	1.19	3.89	4.98	8.86	94	131	125
SW4107	1.55	1.23	1.23	4.01	4.84	8.85	93	135	125
SW4412Y	1.53	1.14	1.19	3.86	4.92	8.77	90	129	123
HVS4220Q	1.47	1.13	1.14	3.74	5.02	8.76	92	125	123
AFX174082*	1.52	1.19	1.18	3.89	4.80	8.69	92	131	122
54VR10	1.46	1.17	1.15	3.77	4.81	8.59	94	126	121
MAGNUM 8-WET	1.44	1.12	1.24	3.79	4.78	8.55	90	127	120
REGEN	1.41	0.98	1.14	3.54	4.54	8.09	90	119	114
ALFABAR	1.38	0.95	1.07	3.40	4.66	8.04	89	114	113
ONEIDA VR	1.11	0.83	1.01	2.95	4.28	7.23	87	99	102
VERNAL	1.18	0.81	1.01	3.01	3.99	6.99	84	101	98
Mean	1.46	1.09	1.17	3.72	4.78	8.50	91	2.98	7.11
5% LSD	0.12	0.08	0.10	0.25	0.40	0.58	4		
CV (%)	6.7	6.0	6.6	5.2	6.6	5.4	3.4		

^Variety means are LSMEANS derived from incomplete block statistical analysis. Therefore, season or multiple-year totals will not be the arithmetic sum of individual cuts or years, respectively.

Alfalfa Check Cultivars are VERNAL, ONEIDA VR

*EXPERIMENTAL ENTRIES Overall means are for 20 trial entries.

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2022 New York Alfalfa Yield Trials

Cornell U. Agricultural Experiment Station, Tompkins Co., Ithaca, NY

Sown May 2021

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)				2022 Total t/a	% Stand 2-Nov-22	% of Checks Mean 2022 Total
	10-Jun	13-Jul	6-Oct				
HYBRIFORCE-4420/Wet	1.63	0.72	0.94		3.30	76	124
55V50	1.66	0.73	0.84		3.24	79	122
WL 349HQ	1.52	0.72	0.86		3.08	72	116
54Q29	1.56	0.69	0.82		3.08	78	116
FF42.A3	1.57	0.64	0.85		3.05	75	115
SW5614*	1.53	0.74	0.76		3.03	75	114
SW4515	1.55	0.70	0.78		3.03	72	114
FSG 450	1.49	0.65	0.87		3.00	73	113
6453Q	1.41	0.78	0.81		3.00	74	113
SW5606*	1.53	0.65	0.77		2.95	77	111
SW5615	1.47	0.68	0.78		2.92	72	110
ONEIDA VR	1.40	0.50	0.92		2.82	73	107
54Q16	1.40	0.65	0.72		2.77	71	104
BISON	1.20	0.48	0.93		2.61	62	98
AFX 439	1.31	0.54	0.75		2.60	73	98
VERNAL	1.23	0.39	0.85		2.48	62	93
							Ck. Mean
Mean	1.46	0.62	0.84		2.91	71	2.65
5% LSD	0.19	0.13	0.08		0.31	8	
CV (%)	10	16.1	7.9		8.5	8.6	

^Variety means are LSMEANS derived from incomplete block statistical analysis. Therefore, season or multiple-year totals will not be the arithmetic sum of individual cuts or years, respectively.

Alfalfa Check Cultivars are VERNAL, ONEIDA VR

*EXPERIMENTAL ENTRIES

Overall means are for 21 trial entries.

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2022 New York Alfalfa Yield Trials - Roundup Ready Varieties

Cornell U. Agricultural Experiment Station, Tompkins Co., Ithaca, NY

Sown August 2020

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)			2022 Total t/a	2021 Total t/a	2-Yr. Total (t/a)	% Stand 12-Sep-22	% of Trial Mean	
	1-Jun	6-Jul	25-Aug					2022 Total	2-Yr. Total
54VR10	1.61	1.20	1.24	4.05	5.41	9.46	94	108	110
AFX463-RR	1.53	1.12	1.22	3.87	5.05	8.92	92	103	104
AFX455-HVX	1.39	1.02	0.96	3.38	4.01	7.38	91	90	86
Mean	1.50	1.11	1.14	3.75	4.83	8.57	93		
5% LSD	0.15	0.11	0.13	0.31	0.31	0.43	4		
CV (%)	6.7	6.3	7.5	5.4	4.6	3.3	2.5		

^Variety means are LSMEANS derived from incomplete block statistical analysis. Therefore, season or multiple-year totals will not be the arithmetic sum of individual cuts or years, respectively.

*EXPERIMENTAL ENTRIES

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2022 New York Alfalfa Yield Trials - Trials not sprayed with Insecticides

Cornell University Agricultural Experiment Station, Tompkins County, Ithaca, Central New York

Sown June 2019

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)						3-Yr Total t/a	% Stand 7-Nov-22	% of Trial Mean		2022 PLH Damage Score
				2022	2021	2020			2022	3-Yr	
	17-Jun	29-Jul	14-Sep	Total t/a	Total t/a	Total t/a			Total	Total	
SW315LH	1.94	0.65	0.89	3.48	4.84	3.81	12.13	48	102	109	1.2
SCEPTER	1.72	0.73	0.71	3.16	4.99	3.90	12.05	66	93	108	1.0
431RRLH	2.05	0.80	0.79	3.64	4.68	3.54	11.86	66	107	106	1.0
NRGEE	2.03	0.93	1.05	4.02	4.65	3.02	11.69	78	118	105	2.8
BLUEJAY 4HR	1.65	0.84	0.82	3.30	4.66	3.67	11.63	69	97	104	2.1
ONEIDA VR	1.76	0.75	0.96	3.47	4.47	3.30	11.24	70	102	101	2.8
TRIADE*	1.65	0.94	1.08	3.68	3.91	2.76	10.35	72	108	93	4.0
PAOLA*	1.61	0.95	1.21	3.77	3.75	2.77	10.29	74	111	92	4.0
VERNAL	1.63	0.62	0.87	3.11	4.11	3.05	10.27	46	92	92	2.5
GO-2018-FU*	1.15	0.19	0.26	1.60	4.08	2.74	8.43	11	47	69	1.2
									Trial Mean		
Mean	1.76	0.74	0.89	3.40	4.49	3.35	11.17	60	3.40	11.17	2.1
5% LSD	0.25	0.12	0.18	0.38	0.40	0.40	0.80	9			0.6
CV (%)	10.0	11.8	13.9	7.8	6.9	9.5	5.0	10.3			18.8

Potato leafhopper (PLH) damage score was from 1 (no damage) to 5 (severe damage), means are for 13 trial entries.

2022 New York Alfalfa Yield Trials - Trials not sprayed with Insecticides

Cornell University Agricultural Experiment Station, Tompkins County, Ithaca, Central New York

Sown August 2020

Released And Experimental Varieties	2022 Harvest (yields reported in tons/acre)					2-Yr Total t/a	% Stand 12-Sep-22	% of Trial Mean		2022 PLH Damage Score
				2022	2021			2022	2-Yr	
	1-Jun	6-Jul	26-Aug	Total t/a	Total t/a			Total	Total	
55H96	1.58	1.02	1.17	3.77	4.90	8.67	90	109	111	1.0
SW16ZPD02*	1.53	1.06	1.10	3.69	4.65	8.34	89	107	107	1.0
BLUEBIRD	1.45	0.97	1.07	3.49	4.42	7.92	88	101	101	1.6
ONEIDA VR	1.25	0.83	0.96	3.06	4.26	7.32	89	89	94	2.4
VERNAL	1.38	0.86	1.08	3.32	3.99	7.31	87	96	94	2.6
								Trial Mean		
Mean	1.42	0.95	1.08	3.45	4.36	7.81	88	3.45	7.81	1.5
5% LSD	0.20	0.11	0.11	0.36	0.36	0.72	4			0.6
CV (%)	10.0	8.1	7.2	7.3	6.6	6.4	3.0			26.3

Potato leafhopper (PLH) damage score was from 1 (no damage) to 5 (severe damage), means are for 13 trial entries.

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2022 Trials: DATA WERE NOT COLLECTED IN 2021 DUE TO LATE PLANTING.

2022 New York Alfalfa Yield Trials

Cornell University Agricultural Experiment Station, Tompkins County, Ithaca, Central New York

Sown May 2022

Released And Experimental Varieties	Breeding Co./ Marketer
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54Q16	Pioneer
54Q29	Pioneer
54VR12	Pioneer
6453Q	NEXGROW
AFX 439	Alforex
AFX 479	Alforex
AFX184021	Alforex
AFX184035	Alforex
BISON	Bluemoon Farms
FF 42.A3	DLF Pickseed
FSG 450	Seedway
HYBRIFORCE-4420/Wet	Alforex
ONEIDA VR	check
SW4515	S&W
SW5614	S&W
SW5615	S&W
VERNAL	check
VIKING 374HD	Albert Lea Seed
VIKING 394AP	Albert Lea Seed
WL 349HQ	Check

2022 New York Alfalfa Yield Trials - Trials not sprayed with Insecticides

Cornell University Agricultural Experiment Station, Tompkins County, Ithaca, Central New York

Sown May 2022

Released And Experimental Varieties	Breeding Co./ Marketer
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525LH	S&W
55H96	Pioneer
FSG 421LH	S&W
ONEIDA VR	check
SW4602LH	S&W
VERNAL	check
VIKING 342LH	Albert Lea Seed
WL 358LH	Seedway

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