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2017 Small Grains Performance Trials for New York

Enclosed are the results of our 2017 small grains regional trials and the cumulative summaries over years. Because the rankings of the varieties and lines often change from year to year, only the multiple year summaries should be considered to be useful indicators of varietal performance in this region. Reproduction of any table in this report must include the entire table unless we approve the editing. The information herein is provided with the understanding that no discrimination is intended and no endorsement by Cornell University or its employees is implied.

Your comments and suggestions concerning this report are welcome. If you would like additional information or do not wish to receive this report in the future, please contact us. Summaries and information about the Cornell Small Grains Breeding & Genetics Project are maintained on our small grains web page: <http://smallgrains.cals.cornell.edu>

We have continued to develop and test selections from our molecular marker-assisted breeding program in our soft winter wheat breeding program. Our most recent varieties are Medina (soft white) and Erie (soft red). These selections have improved resistance to preharvest sprouting and fusarium head blight combined with excellent agronomic performance. Erie is a soft red winter wheat variety released in collaboration with Ohio State University that has excellent grain yield and disease resistance to powdery mildew, leaf spot, glume blotch, leaf rust, wheat spindle streak mosaic virus, wheat soil borne mosaic virus, and moderate resistance to fusarium head blight (scab). In collaboration with the University of Illinois, we have also released a high-yielding spring oat variety named Corral.

I wish to recognize the contributions of Research Support Specialist, David Benscher, Technical Assistant, James Tanaka, Field Assistants, Amy Fox, Jesse Chavez and Extension Support Specialist Judy Singer and thank them for their dedication.

Sincerely,

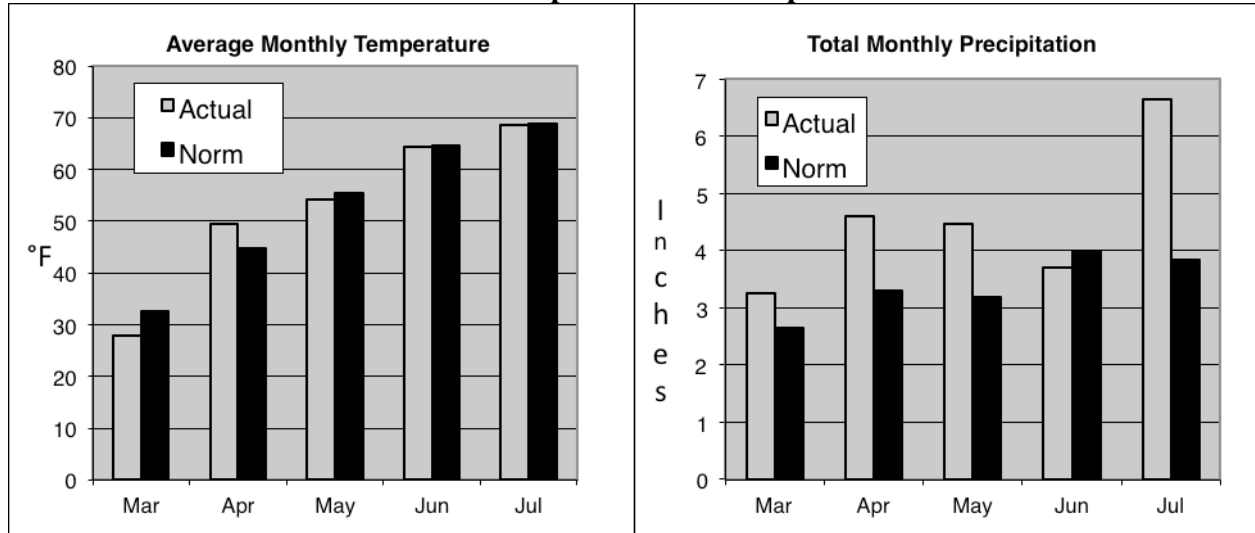
Mark E. Sorrells
Professor of Plant Breeding & Genetics

Testing Procedures:

In 2017, the Soft White Winter Wheat, Soft Red Winter Wheat, Winter Malting Barley, Winter Hybrid Rye, Spring Malting Barley, and Spring Oat regional trials were grown in four locations. The wheat and oat trials near Ithaca consisted of 2 replicates while those out in the state consisted of 3 replicates. All barley and rye trials were grown in 3 replicates at all locations. All trial plots are 6-rows, 4 meters long with 18 cm between rows. Prior to harvest, the plots are trimmed to 3 meters. Disease and lodging notes were recorded on a 0 to 9 scale with 0 being the best and 9 the poorest. All trials are planted in a randomized complete block design and analyzed by

standard ANOVA. If there are indications of within replicate field variation a second ANOVA using a nearest-neighbor adjustment is computed based on the nearest 8-plot mean. If the coefficient of variation was reduced and the variance due to genotypes was the same or increased, those adjusted means were used for the summary. All trials are fertilized according to soil test recommendations for small grains. Winter grains trials generally receive a top dress of 45 kg/h (40 lbs/a) of actual N in the spring. For more information about small grains management see <http://fieldcrops.cals.cornell.edu/>.

2017 Precipitation and Temperature



The winter wheat, winter malting barley and hybrid rye trials were planted on September 28 and October 6 in Ithaca, on September 27 in Monroe County, and October 7 in Seneca County. The spring grains were planted on April 24 and April 28 in Ithaca, May 11 in Genesee County and April 27 in Steuben County. The Hudson Valley winter trials were planted on October 4 and spring trials were planted April 18. The growing season averaged about 0.3 degrees cooler than normal and rainfall was 5.72 inches above average rainfall with a total of 22.7 inches for the growing season in Ithaca. The 2017 growing season was the seventh wettest March 1 to June 30 period since 1873 when records were initiated at the Game Farm weather station near the Cornell Campus.

Acknowledgments:

Our testing program depends on being able to test new varieties in the areas where they will be grown under actual farming conditions. We gratefully acknowledge the many farmers who have provided us with a test site for our regional trials over many years. This year, test sites for winter grains were generously provided by Ron Breslowski - Monroe County, Jeffrey Trout - Seneca County, and Rick Pederson - Ontario County. Test sites for spring grains were provided by Dave Wallace - Steuben County, Ted Hawley - Genesee County, Tom Ryan - Genesee County, and Eddie Clevenger in Ulster County (Farm Hub). Without their support we would not be able to provide accurate, unbiased test results. Extension specialists Mike Stanyard and Kevin Ganoe, Aaron Gabriel and Justin O’Dea have been instrumental in arranging test sites, field days, and information distribution. Also, we thank Drs. Gary C. Bergstrom, William J. Cox, and Margaret E. Smith, extension faculty in Plant Pathology, Crop and Soil Sciences, and Plant Breeding & Genetics for their excellent cooperation and support. We also gratefully acknowledge the financial support from the Genesee Valley Regional Marketing Authority, NY State Ag & Markets, and the USDA NIFA Organic Research and Extension Initiative grant number 2011-51300-30697. Most importantly, a special thanks goes to Judy Singer for her help in proofreading the data and report.

2017 Soft White Winter Wheat Summaries – Cornell University

Entry	Grain Yield (kg/h)						Test Weight kg/hl	Lodging Score	Head Date	Winter Surv %	Height cm	Preharvest		FHB Incid. %	FHB Sev. %	FHB Index %	Rank				
	Regional Locations											0-9	Rank					WSSMV 0-9			
	th-McC	lth-Ket	SenCo	MonCo	Mean	Rank															
1	Houser	5473	4636	4421	6597	5282	29	69.5	30	1.7	5/30	99	113	4.6	21	6.3	na	na	na	na	
2	Caledonia	7076	4919	5191	6437	5906	12	70.3	27	0.3	5/29	99	93	5.5	26	5.7	59	21	12.2	22	
3	Cayuga	5200	5070	5148	5817	5309	28	75.4	1	1.5	6/1	97	123	2.3	3	6.3	na	na	na	na	
4	Medina	6138	5642	5892	6428	6025	9	72.8	7	0.7	5/31	99	114	3.5	9	7.0	13	13	1.7	3	
5	Hopkins	6669	5505	5897	6870	6235	4	71.3	20	0.3	5/29	99	101	5.5	24	5.3	na	na	na	na	
6	Otsego	5083	4741	5502	5664	5247	30	70.8	23	1.2	5/28	98	103	0.8	1	2.7	61	14	8.8	17	
7	NY99056-161	6220	5241	6221	6152	5959	11	73.6	4	1.0	5/31	98	103	4.2	18	5.7	8	5	0.4	1	
8	NY99069-249	5279	5788	6202	6067	5834	16	71.6	17	0.3	5/28	97	98	4.9	23	4.0	37	21	7.8	15	
9	NY07078-876	5870	5165	6103	6211	5837	15	72.1	12	1.0	5/30	97	107	4.0	15	5.3	24	12	2.8	6	
10	NY94052-6090B-1074	5468	5525	5979	6508	5870	13	72.4	10	0.5	6/2	100	106	3.3	7	7.0	15	29	4.4	9	
11	F1027	6744	4693	5807	5847	5773	18	72.8	6	0.0	5/28	97	93	4.1	17	5.3	70	18	12.5	23	
12	NY02008-807	6182	5228	5692	6085	5797	17	73.7	3	0.8	5/19	93	111	3.1	6	6.0	22	9	2.0	4	
13	NY09095-16-928	5414	4866	5892	5384	5389	26	73.8	2	1.2	5/27	98	101	2.4	4	6.3	21	7	1.4	2	
14	NY09125-16-1034	5417	4988	5258	5882	5386	27	69.6	29	1.7	5/27	99	99	2.0	2	5.3	39	14	5.3	11	
15	Caledonia Reselect-L-W	6723	4620	5769	5835	5737	20	71.9	14	1.7	5/27	97	106	3.9	14	4.3	49	17	8.5	16	
16	NY10127-10-62-1308	6237	5410	6047	6485	6045	7	72.9	5	0.0	6/1	96	103	3.0	5	5.7	24	21	5.0	10	
17	Target	6707	6015	6560	6721	6501	1	71.5	18	0.0	5/30	99	103	7.1	30	4.3	65	18	12.0	21	
18	MSU Line F1029	6403	4813	5302	5906	5606	24	70.5	26	1.0	5/27	99	102	6.0	27	3.0	48	11	5.5	12	
19	NY01003-1184	6435	4865	6083	6049	5858	14	72.6	9	1.2	5/31	100	108	3.8	13	2.7	40	29	11.8	20	
20	MI14W0253	5927	4597	5596	5790	5478	25	70.8	24	1.7	5/28	95	103	6.5	29	5.3	63	23	14.7	25	
21	MI14W0007	7561	5284	6576	6204	6406	2	72.0	13	1.8	5/27	99	107	4.2	19	6.0	63	31	19.3	27	
22	MI14W0167	5874	4194	5778	6645	5623	23	71.0	21	0.7	5/29	96	92	6.2	28	5.3	46	20	9.0	18	
23	MSU Line E8052	6891	4596	5635	5734	5714	21	69.7	28	0.0	5/28	99	95	4.8	22	7.0	62	11	6.6	13	
24	NY10127-10-04-1305	6038	5480	6086	6438	6011	10	72.4	11	0.3	5/29	98	99	3.8	12	5.7	46	15	6.9	14	
25	NY01003-1186	6251	4831	5788	6148	5754	19	71.9	15	2.0	5/28	99	100	3.5	10	5.0	73	25	18.0	26	
26	NY11025-07-08-1369	6810	5153	6656	6327	6236	3	70.7	25	0.3	5/28	95	93	3.5	11	6.3	47	25	11.6	19	
27	NY02007-1206	7138	5439	5422	6629	6157	5	72.7	8	0.0	5/31	100	106	3.4	8	7.0	19	12	2.3	5	
28	NY11014-9-25-1319	6862	5509	5603	6579	6138	6	71.8	16	0.7	5/30	99	104	4.1	16	5.0	24	15	3.6	8	
29	NY11025-02-04-1365	5575	5466	5834	5765	5660	22	71.4	19	0.0	5/30	98	99	4.4	20	4.7	30	11	3.4	7	
30	NY11025-07-17-1371	7181	5288	5648	6040	6039	8	70.9	22	0.7	5/28	96	95	5.5	25	7.3	53	26	13.8	24	
Mean		6228	5119	5786	6175	5827		71.8		0.8	5/25	98	102	4.1		5.4	42	18	7.8		
CV		8.8	10.0	10.8	6.3																

Entry	Grain Yield						Test Weight		Lodging		Head Date	FHB %Inc	FHB %Sev	FHB Index	Preharv Sprout	wssmv Rating	Height cm								
	5 Year		4 Year		2 Year		4 Yr	lb/b	2 Yr	lb/b								4 Yr	2 Yr	2 Yr	3 Yr	3 Yr	3 Yr	2 Yr	2 Yr
	kg/h	b/a	kg/h	b/a	kg/h	b/a																			
1	Houser	5057	75	5216	78	5196	77	72.2	56.9	73.5	57.9	3.0	2.8	5/30	na	na	na	4.5	4.5	115					
2	Caledonia	5438	81	5698	85	6035	90	71.7	56.5	74.8	58.9	0.3	0.2	5/30	40	13	6.6	5.0	3.5	92					
3	Cayuga	4925	73	5179	77	5342	79	76.2	60.0	78.6	61.9	4.2	4.5	6/1	na	na	na	2.2	3.5	123					
4	Medina	5488	82	5758	86	6031	90	73.9	58.2	76.2	60.0	0.7	0.3	5/31	8	7	0.9	3.2	4.2	110					
5	Hopkins	5627	84	5962	89	6026	90	72.3	56.9	75.2	59.2	0.8	0.7	5/30	na	na	na	4.5	3.8	100					
6	Otsego	5255	78	5444	81	5175	77	73.5	57.9	74.7	58.8	2.5	2.1	5/29	38	8	4.6	0.5	1.8	103					
7	NY99056-161	5670	84	5957	89	6105	91	73.3	57.7	76.1	59.9	1.3	0.8	5/31	6	3	0.2	3.9	3.2	100					
8	NY99069-249	5645	84	5861	87	5938	88	72.7	57.2	75.7	59.6	1.5	0.2	5/29	33	14	5.2	4.1	2.3	97					
9	NY07078-876			5801	86	6001	89	73.0	57.5	75.2	59.2	0.9	0.5	5/30	14	6	1.4	3.7	3.7	103					
10	NY94052-6090B-1074			5866	87	6094	91	73.2	57.7	75.5	59.5	0.8	0.3	6/1	10	15	2.2	3.5	4.3	104					
11	F1027					6028	90			76.9	60.6		0.0	5/30	40	9	6.3	3.8	3.5	92					
12	NY02008-807					5827	87			76.5	60.2		0.4	5/26	13	5	1.0	3.2	3.8	109					
13	NY09095-16-928					5369	80			76.6	60.3		3.1	5/29	13	4	0.7	2.7	4.5	99					
14	NY09125-16-1034					5436	81			73.6	58.0		4.3	5/29	21	7	2.7	2.0	4.5	98					
15	Caledonia Reselect-L-W					5843	87			75.6	59.6		1.8	5/29	27	9	4.3	3.9	2.7	106					
16	NY10127-10-62-1308					5908	88			75.7	59.6		0.0	6/1	16	11	2.6	2.5	3.2	100					

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