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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,

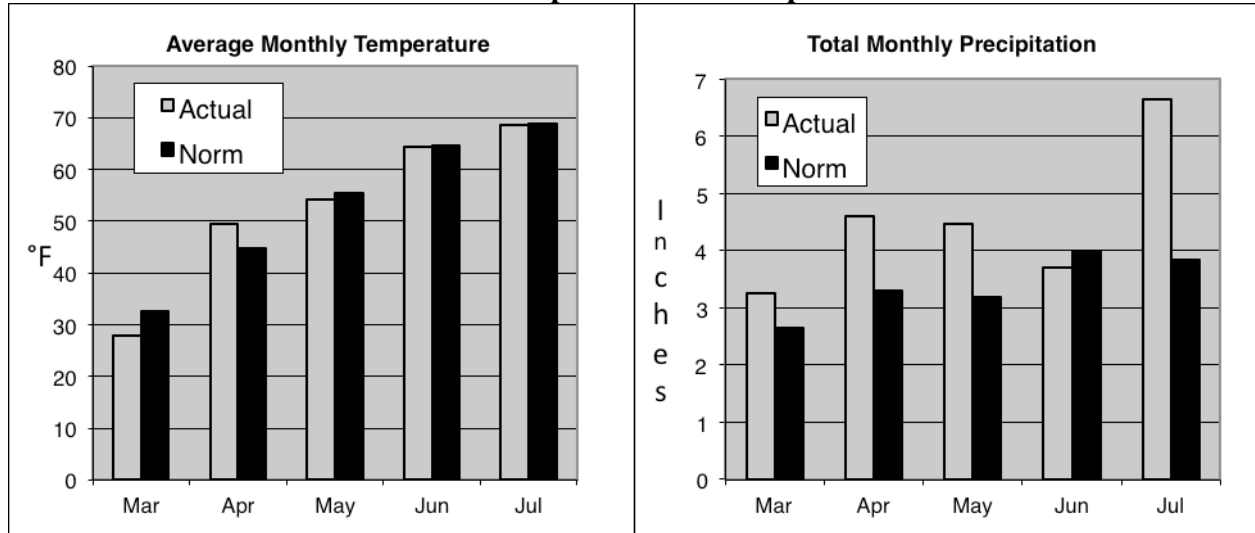
Mark E. Sorrells
Professor of Plant Breeding & Genetics

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 Winter Malting Barley Regional Trial Summary – Cornell University

Entry	Row	Grain Yield (kg/h)							Test Weight kg/hl	Lodg. 0-9	Height cm	Head Date	Wint Surv %	FHB Inc %	FHB Sev %	FHB Index (%)	FHB Rank	FHB DON ppm	PHS 0-9 Rank	Powdery Mildew 0-9	Scald 0-9	Kerne Wt (mg)	on 6/64" (%)	Malt Ext (%)	Barley Protein (%)	DP ASBC	Beta																			
		Regional Locations		Mean	b/a	Rank	Rank	Rank																			Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
		lth-McG	lth-Ket																																											
1	Charles	2	3007	2932	3917	2828	3171	59	23	51.7	24	5.8	69	5/22	63	30	19	6	15	NA	1.4	20	0.0	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA													
2	Saturn	6	7144	5321	5466	4896	5707	106	1	57.2	19	0.5	79	5/24	65	50	8	4	10	0.0	1	0.0	0.7																							
3	10467r2	2	5747	4302	5733	3885	4917	91	9	60.9	6	0.0	78	5/22	58	67	11	7	16	0.3	12	0.0	0.8																							
4	KWS Scala	2	5259	3881	3452	3516	4027	75	19	60.2	11	0.5	71	5/23	63	32	8	3	4	0.8	16	0.2	4.7																							
5	SY Tepee (209-66)	2	5662	4311	3960	4505	4610	86	13	60.0	14	0.7	78	5/24	67	40	13	5	14	0.5	13	0.2	1.2																							
6	Endeavor	2	4398	4278	5115	4055	4461	83	14	60.3	10	0.9	84	5/24	55	28	7	2	2	5.0	24	0.5	2.2																							
7	6Ab08-X03W012-5	6	3659	3469	4354	3720	3800	71	22	56.5	22	4.8	100	5/24	75	37	11	4	9	0.5	14	3.5	1.2																							
8	Nectararia	2	6343	4605	4888	4098	4983	93	7	60.9	5	0.7	78	5/22	88	47	11	5	12	1.4	19	2.7	0.3																							
9	AC 07/041/8 (Flavia)	2	4900	3886	3865	4479	4283	80	16	61.2	4	0.3	67	5/21	79	55	13	7	17	0.9	17	0.2	3.3																							
10	KWS Somerset	2	6360	4781	4979	4199	5080	94	4	60.6	8	0.7	85	5/24	66	73	15	11	21	0.6	15	0.3	1.2																							
11	KWS2-430	2	5846	5031	4277	4455	4902	91	10	61.7	2	0.8	82	5/24	79	28	11	3	5	2.0	21	0.3	1.8																							
12	06-OR-9	6	4876	4799	6536	3725	4984	93	6	57.0	20	1.3	98	5/27	74	73	22	16	24	0.1	5	2.2	0.2																							
13	MW11S3029-010	6	3479	4140	4638	4000	4064	76	18	58.6	17	5.2	95	5/19	74	38	6	2	3	0.2	9	2.5	1.8																							
14	MW11S3034-006	6	5154	4092	4338	3797	4345	81	15	59.7	15	4.8	87	5/18	73	28	6	2	1	0.1	7	3.0	0.8																							
15	SU-Mateo	2	5423	4790	5253	4784	5063	94	5	60.8	7	0.2	88	5/26	69	58	17	10	20	1.0	18	0.0	0.8																							
16	Vincenta	2	4402	3332	5040	4349	4280	80	17	57.4	18	0.9	74	5/23	55	28	12	3	7	0.1	8	0.0	1.8																							
17	10/069/1	6	6396	4788	5030	3663	4969	92	8	60.6	9	0.9	78	5/21	64	77	12	9	19	0.0	2	0.5	3.3																							
18	6W11-0064	6	4704	4852	4756	4476	4697	87	12	56.1	23	3.0	86	5/24	86	80	19	15	23	0.1	6	2.2	0.2																							
19	6W13-7041	6	5006	5370	5484	5257	5279	98	2	56.8	21	1.6	95	5/28	69	58	15	9	18	0.1	3	2.2	0.2																							
20	Alba	2	5106	5360	5021	5132	5154	96	3	59.2	16	1.7	97	5/27	74	78	18	14	22	0.3	11	2.8	0.0																							
21	DH130718	2	2584	2345	3176	2521	2656	49	24	60.1	13	0.2	74	5/23	52	35	11	4	8	4.3	23	1.0	0.7																							
22	DH130910	2	6008	3556	4571	4913	4762	89	11	63.1	1	0.2	80	5/23	73	52	10	5	13	0.1	4	0.0	1.8																							
23	OSU10.0925	2	4831	2923	4291	3752	3949	73	20	60.1	12	0.8	67	5/21	65	48	10	5	11	0.2	10	0.2	3.3																							
24	DH140088	2	3163	3733	3888	4819	3901	73	21	61.6	3	2.3	82	5/22	66	38	8	3	6	3.0	22	2.5	1.2																							
Mean			4977	4203	4668	4159	4502	84		59.3			82	5/23	69	49	12	6		1.0	12.5	1.1	1.6																							
CV			21.6	12.6	17.2	13.9																																								

* feed barley

Cumulative Summary

Entry	Row	Grain Yield							Test Wt(2Yr)	Lodg 0-9	Height cm	Head Date	Wint Surv %	FHB Inc %	FHB Sev %	FHB Index Score	PHS 0-9 Rank	Kernel Wt (mg)	on 6/64" (%)	Malt Ext (%)	Protein (%)	DP (ASBC)	Glucan ppm	FAN ppm	Qual Score															
		5 Year		3 Year		2 Year		kg/hl																		lb/b	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr
		kg/h	b/a	kg/h	b/a	kg/h	b/a																																	
1	Charles	2	3012	56	3292	61	3786	70	56.9	44.5	2.9	63	5/22	79	33	14.8	5	2.8	33.9	96.0	84.4	8.4	103	201	202	37														
2	Saturn	6	4602	86	5074	94	5676	105	59.8	46.7	0.3	75	5/24	81	46	9.67	4	0.3	37.1	95.0	77.2	8.1	89	608	113	22														
3	10467r2	2	4091	76	4615	86	5402	100	63.8	49.8	0.0	76	5/23	76	47	9.5	5	0.9	36.0	96.2	82.2	7.8	94	92	167	41														
4	KWS Scala	2	3637	68	4172	78	4766	89	62.3	48.7	0.3	66	5/23	80	36	9.17	3	1.8	43.3	98.2	83.0	9.2	128	43	172	52														
5	SY Tepee (209-66)	2	3766	70	4254	79	4865	90	63.1	49.3	0.3	72	5/23	83	47	12.3	6	2.3	39.9	97.0	82.6	7.8	114	28	181	45														
6	Endeavor	2	3708	69	4188	78	4595	85	64.3	50.2	0.5	78	5/24	65	21	7.33	1	3.3	31.7	90.0	82.1	8.0	87	409	173	33														
7	6Ab08-X03W012-5	6			4045	75	4352	81	60.9	47.5	2.4	91	5/24	84	33	10.8	4	1.0	31.4	86.6	80.2	8.2	107	254	163	34														
8	Nectararia	2			4137	77	4864	90	63.0	49.2	0.3	72	5/23	94	45	11.3	5	1.4	33.2	97.3	82.5	8.7	117	295	166	39														
9	AC 07/041/8 (Flavia)	2			4375	81	4962	92	63.8	49.8	0.1	63	5/22	89	34	10.2	4	1.7	42.3	98.1	82.4	8.5	95	61	151	46														
10	KWS Somerset	2					5284	98	63.0	49.2	0.3	77	5/23	81	70	14	10	2.6																						
11	KWS2-430	2					5180	96	64.0	50.0	0.4	76	5/23	87	31	10	3	3.8																						
12	06-OR-9	6					5224	97	59.6	46.6	0.6	87	5/26	85	67	18.3	12	1.7																						
13	MW11S3029-010	6					4622	86	61.7	48.2	2.6	91	5/18	85	26	7.5	2	1.8																						
14	MW11S3034-006	6					4705	87	62.7	49.0	2.4	82	5/17	85	26	8.33	2	0.5																						

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