

## Choosing Small Grains for NY Growers

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The Cornell Small Grains Project has a history more than 100 years of developing innovative approaches to crop improvement. Our research program utilizes appropriate technologies encompassing molecular genetics, physiology, pathology, and breeding to develop strategies that contribute to the development of superior crop varieties.

Each year we conduct regional trials on winter wheat winter, winter and spring barley, spring oats, and spring wheat. More recently we have begun testing winter rye, spelt, emmer, and einkorn and those results will be presented. We also develop and release our own varieties. We have released 12 winter wheat, one winter barley, and four spring oat varieties. Below are the cumulative summaries over years for our 2013 small grains regional trials. 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.

For soft white winter wheat, Medina is our recommended variety.

### Soft White Winter Wheat Regional Summary

Entry	Cumulative Summary																		
	Grain Yield						Test Weight			Lodging		Head	FHB	FHB	Preharv	WSSMV	WSbM	Height	
	4 Year		3 Year		2 Year		3 Yr	lb/b	2 Yr	0-9	0-9	Date	%Inc	%Sev	2 Yr	2 Yr	2 Yr	2 Yr	2 Yr
	kg/h	b/a	kg/h	b/a	kg/h	b/a													
1 Houser	4809	72	4548	68	4596	68	73.7	58.0	73.4	57.8	2.0	3.0	5/24	na	na	4.6	1.8	0.3	96
2 Caledonia	4872	72	4574	68	4630	69	73.8	58.1	73.6	58.0	1.1	1.6	5/24	51	34	5.9	1.5	0.2	76
3 Cayuga	4333	64	3999	59	4060	60	76.5	60.2	75.8	59.7	2.3	3.4	5/26	na	na	1.7	1.4	0.2	101
4 Jensen	4719	70	4441	66	4471	66	74.8	58.9	74.4	58.6	2.7	4.0	5/27	46	19	3.0	0.4	3.8	93
5 Medina (NY88046-7088)	4941	73	4648	69	4732	70	74.9	59.0	74.3	58.5	1.8	2.6	5/25	33	17	2.8	1.1	0.2	90
6 Hopkins (NY03180FHB)	4815	72	4582	68	4672	69	74.0	58.3	73.5	57.9	1.7	2.6	5/24	34	19	4.1	1.2	0.5	86
7 NY99045-3110	4981	74	4635	69	4724	70	73.8	58.1	73.1	57.6	2.0	3.0	5/26	25	12	5.1	4.8	0.8	94
8 Otsego			4735	70	4712	70	74.6	58.7	73.8	58.1	2.4	3.7	5/24	36	11	0.8	0.5	0.2	88
9 NY99059-249			4659	69	4861	72	75.6	59.5	75.0	59.1	1.8	2.8	5/25	28	10	4.8	0.7	2.3	83
10 NY94046-150			4610	69	4738	70	74.2	58.4	73.9	58.2	1.9	2.9	5/25	24	18	5.3	2.6	2.3	93
11 NY99056-161					4904	73			74.2	58.4			5/25	26	10	3.3	1.3	2.6	87
12 NY94063-117					4700	70			73.3	57.7			5/22	47	27	4.0	1.1	0.5	84
13 NY01016-AN					5218	78			75.3	59.3			5/24	30	21	3.3	0.6	0.2	88
14 NY07104-141					4359	65			75.2	59.2			5/25	15	4	2.4	1.3	3.3	91
15 NY99069-WC					4487	67			76.1	59.9			5/26	23	13	2.6	6.8	4.7	94

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There are several soft red winter wheat varieties that are acceptable for NY. Currently, Otsego, Emmit, and Pioneer brand 25R39 are recommended.

### Soft Red Winter Wheat Regional Summary

Entry	Cumulative Summary																	
	Grain Yield						Test Wt(2Yr)		Lodg.	Height	Head	Winter	Preharv	FHB	FHB	FHB		
	4 Year		3 Year		2 Year		kg/hl	lb/b	2 Yr	2 Yr	Date	Surv.	0-9	wssmv	wssmv	Incid.	Sev.	Index
	kg/h	b/a	kg/h	b/a	kg/h	b/a												
1 Otsego	5014	75	4757	71	4600	68	75.1	58.7	2.8	77	5/26	99	0.8	0.4	0.7	36	11	3.9
2 Emmit	5278	78	5035	75	5068	75	75.4	58.9	0.4	77	5/27	98	0.9	6.8	2.3	26	24	5.1
3 Pioneer 25R39	5027	75	4870	72	4859	72	75.3	58.8	2.5	74	5/27	99	1.1	5.4	2.5	21	9	2.6
4 HY116-SRW	5193	77	4991	74	4996	74	74.0	57.8	2.3	77	5/27	96	2.8	0.7	2.3	41	13	6.5
5 OH02-12686	5556	83	5271	78	5238	78	76.0	59.4	1.3	81	5/29	99	3.5	0.7	0.2	22	15	4.0
6 Bromfield	5092	76	4936	73	4932	73	75.9	59.3	2.3	81	5/28	98	1.9	1.6	0.0	28	10	2.7
7 OH04-268-39	5361	80	5076	75	5131	76	74.8	58.4	1.5	84	5/29	99	0.7	1.3	2.0	26	14	3.4
8 DF55			5093	76	5052	75	76.1	59.5	1.5	73	5/27	100	2.4	1.5	0.3	46	13	5.9
9 DF75			5242	78	5304	79	76.5	59.7	2.0	75	5/26	99	0.3	3.3	0.5	43	24	9.2
10 Pioneer 25R34			5334	79	5328	79	74.7	58.3	1.3	76	5/26	98	2.5	6.9	2.8	25	7	2.2
11 FSX815					5175	77	74.3	58.1	1.5	73	5/24	99	1.8	6.4	2.7	56	12	7.3
12 IL05-4236					4580	68	76.7	59.9	5.4	80	5/21	98	1.9	3.9	0.8	39	15	6.5

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Corral is the only spring oat variety recommended for NY.  
Spring Oat Regional Summary

Cumulative Summary		Grain Yield						Test Weight		Head	Lodging	Height		
Entry	7 Years		6 Years		3 Years		2 Years		kg/hl	lbs/b	Head	0-9	cm	
	kg/h	b/a	kg/h	b/a	kg/h	b/a	kg/h	b/a			Date			2 Yr
1	OGLE	2890	81	2994	83	2727	76	3094	86	42.7	33.4	6/19	1.7	89
2	NEWDAK	3018	84	3094	86	2889	81	3218	90	46.5	36.4	6/17	3.0	98
3	Corral (IL00-7267)	3390	95	3495	97	3346	93	3850	107	46.8	36.6	6/20	1.0	91
4	IL02-8658			3209	89	3044	85	3621	101	46.0	35.9	6/18	1.3	93
5	IL04-7077					3072	86	3406	95	48.3	37.7	6/19	1.3	83
6	IL05-9931					3112	87	3662	102	46.1	36.1	6/20	0.7	84
7	SD081936					3318	93	3754	105	47.6	37.2	6/17	1.3	86
8	SD081107							3784	106	45.3	35.4	6/19	2.8	84
9	SD081108							3646	102	47.8	37.3	6/19	2.4	86
10	MN09255							3783	105	47.3	37.0	6/19	2.8	90
11	OA1286-1							3410	95	47.4	37.1	6/20	2.4	98

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We have only just begun testing winter malting barley so these results are preliminary. Entries 2-4 are feed barley checks. KWS Scala, Sytepee, and Charles may be acceptable but more evaluation is required.

Winter Malting Barley Regional Summary

Cumulative Summary		Grain Yield				Lodg.	Height	Head	Winter	Kernel	on	Malt	Barley	DP	Quality
Entry		2 Year		Test Wt(2Yr)		0-9	cm	Date	Surv.	Wt	6/64"	Extract	Protein		
		kg/h	b/a	kg/hl	lb/b	2 Yr	2 Yr	2 Yr	2 Yr	(mg)	(%)	(%)	(%)	°ASBC	
1	Charles	3735	69	52.2	40.8	1.8	76	5/17	83	30.1	92.2	78.8	12.6	142	59
2	Strider	5123	95	57.3	44.8	1.8	90	5/19	89	32.8	74.9	76.4	11.1	55	17
3	McGregor	4774	89	60.2	47.0	2.8	82	5/17	95	33.3	80.5	76.6	11.6	60	24
4	Saturn	6103	113	58.2	45.4	1.3	77	5/17	88	35.8	88.8	75.0	10.5	96	15
5	10467p2	5550	103	59.8	46.7	1.8	81	5/16	92	30.3	87.5	78.4	10.7	95	35
6	10467r2	5753	107	61.8	48.3	1.5	82	5/16	92	34.3	93.2	81.4	9.8	103	39
7	10467r4	5705	106	61.0	47.6	2.3	79	5/17	91	32.8	93.0	80.9	10.6	101	46
8	03/220/158	5282	98	58.6	45.8	1.2	84	5/22	89	33.5	90.2	78.4	11.3	157	38
9	04/153/2	5021	93	62.5	48.8	0.7	92	5/23	88	40.1	96.9	79.9	10.9	122	35
10	04/002/23	4660	87	58.8	45.9	2.7	75	5/16	93	29.8	79.3	78.9	11.2	119	26
11	VA09B-34	4800	89	64.0	50.0	2.5	83	5/11	92	33.9	93.2	75.8	12.6	70	26
12	VA10B-43	4815	89	62.2	48.6	3.0	79	5/14	82	28.3	77.4	76.1	12.7	47	24
13	KWS Scala	4977	93	60.9	47.6	0.7	80	5/19	83	42.3	98.2	80.9	12.0	178	62
14	Mystic	4817	90	62.5	48.8	1.0	79	5/16	90	42.9	96.7	80.2	12.6	138	47
15	Salanandre	4932	92	62.0	48.4	1.3	78	5/17	89	40.8	94.4	79.8	12.0	121	49
16	Etincel (1205 1H23)	5740	107	61.5	48.0	1.7	86	5/17	89	32.4	92.8	78.2	10.6	114	24
17	Sytepee (SY209-66)	5060	94	63.0	49.2	0.7	82	5/19	83	42.3	97.1	82.3	10.4	188	55
18	SY209-72	5034	94	60.9	47.6	1.2	85	5/22	86	38.9	89.7	81.2	10.4	120	41

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This was the first year of testing for spring malting barley so these results are very preliminary. The malting tests are not yet back from the testing lab.

**2013 Spring Malting Barley Regional Summary - Cornell University**

Entry	Grain Yield (kg/h)					Test Wt (kg/h)			Lodging	Head Date	Height cm	Foliar Disease (0-9)
	lth-Sny	MonCo.	MontCo.	Mean	Rank	Mean	Rank	Rank				
1	Herta	3687	3933	1983	3201	8	62.4	4	1.7	6/27	75	6.0
2	Corlon	3639	3436	1718	2931	12	60.3	7	3.5	6/17	68	1.7
3	18-20	3161	3419	1043	2541	17	56.0	17	4.5	6/27	63	4.7
4	Odyssey	2967	3503	634	2368	21	55.3	19	4.3	6/28	60	5.3
5	Overture	3039	3175	950	2388	19	53.9	22	5.0	6/29	63	4.3
6	Genie	3098	3246	784	2376	20	55.1	20	2.7	6/27	60	4.7
7	Lacey	3928	3948	3054	3643	2	60.2	9	1.8	6/19	70	1.7
8	Quest	4063	3878	2344	3429	3	60.3	8	2.5	6/19	80	2.3
9	M145	3892	3906	2390	3396	5	60.8	6	1.8	6/21	90	3.3
10	M150	4076	3454	2464	3332	7	60.1	10	2.5	6/21	80	2.7
11	M152	3386	4107	2552	3348	6	59.8	11	1.7	6/21	78	2.0
12	KWS Asta	2939	3929	677	2515	18	53.1	23	3.8	6/28	63	4.0
13	KWS Irina	2613	3706	663	2328	22	54.8	21	3.0	6/29	50	3.3
14	KWS Thessa	3088	3964	1134	2728	16	55.9	18	3.3	6/27	53	3.7
15	KWS Atrika	3509	3770	1314	2865	13	57.2	16	2.8	6/27	66	4.3
16	Cerveza	3518	3413	2123	3018	11	59.1	13	2.0	6/28	70	7.3
17	Newdale	3851	4128	2256	3411	4	59.2	12	0.5	6/28	75	5.7
18	AAC Synergy	3848	4526	2690	3688	1	58.7	14	0.7	6/27	71	6.3
19	AC Metcalfe	3090	3375	1730	2732	15	58.2	15	3.2	6/29	70	3.7
20	HYCA172	2955	3367	2177	2833	14	62.2	5	1.0	6/14	63	2.3
21	HYCA244	3536	3447	2354	3112	9	64.9	2	0.7	6/18	68	3.0
22	HYCA284	2340	2563	1628	2177	23	67.7	1	0.3	6/22	65	3.3
23	HYCA302	3535	3372	2375	3094	10	62.9	3	0.5	6/28	95	7.0
<b>Mean</b>		<b>2933</b>	<b>2933</b>	<b>2933</b>	<b>2933</b>		<b>59.0</b>			<b>6/24</b>	<b>69</b>	
<b>CV</b>		<b>8.5</b>	<b>13.8</b>	<b>13.1</b>	<b>13.8</b>							

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**Mark E. Sorrells** received his PhD in Plant Breeding and Genetics from the University of Wisconsin – Madison in 1978 and then joined the faculty at Cornell University in the Department of Plant Breeding & Biometry. Since 1991 he has been Professor of Plant Breeding and since 2006 he has been Chair of the Department of Plant Breeding & Genetics. The primary focus of Dr. Sorrells’ research program is on breeding methodologies and the development of small grains varieties. His breeding program has released 16 small grains varieties. Currently the focus of his research is optimizing genomic selection strategies. He has published 260 papers in peer-reviewed journals and is a fellow of the American Association for the Advancement of Science, the Crop Science Society of America, and the American Society of Agronomy. Dr. Sorrells has served as major advisor to 37 PhD students, 9 M.S. graduate students and minor advisor to 22 students.

