

BARLEY (*Hordeum vulgare*)
 Fusarium head blight; *Fusarium graminearum*
 Leaf rust; *Puccinia hordei*
 Spot blotch; *Bipolaris sorokiniana*
 Scald; *Rhynchosporium secalis*

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Evaluation of Fusarium head blight and foliar diseases on winter malting barley varieties in New York, 2015.

Winter malting barley trials were conducted at Helfer and Ketola farms in Ithaca, NY. Each trial was conducted in a randomized complete block design with 2- and 6- row varieties interspersed. Three replicates were planted at Ketola and four replicates were planted at Helfer. Plots were 13 ft long and 6 rows wide with 7-in. row spacing. Seed was sown at a rate of 96 lb/A on 25 Sep at Helfer and 30 Sep at Ketola. Fields were prepared with a 300 lb/A pre-plant application of 10:20:20 (delivering 30 lb/A of nitrogen), and in the spring were top-dressed with 150 lb/A of 34:0:0 (delivering 51 lb/A of nitrogen). No fungicides or insecticides were applied over the course of the trials. Broadleaf herbicide (Maestro 2EC and Harmony Extra SG, with Induce) was applied in early April. No artificial inoculations were performed. Foliar disease severities were estimated across the plot as percentage of the top two leaves affected. Fusarium head blight (FHB) incidence was estimated by counting the number of symptomatic heads out of 50. Foliar diseases and FHB incidence were evaluated on 19 Jun at Ketola and 20 Jun at Helfer. Plants were at the hard dough stage of development at the time of rating. Disease incidence and severity means were analyzed with analysis of variance and separated by Tukey's HSD test ($P=0.05$).

The lowest incidence of FHB was consistently observed in the line 'AC 07/022/2', and the greatest incidence was observed in '03/220/158'. While 'AC 07/022/2' had the lowest FHB incidence, it also consistently had the greatest spot blotch severity. Scald was only observed to have significant results in Ketola, where 'KWS Scala' had a greater severity rating than any other variety. Leaf rust was present at both locations, but there was no difference observed in its severity between varieties. Despite the high incidence of FHB, especially at Helfer, and the presence of spot blotch on every barley variety, no other clear patterns emerged from the disease ratings. This indicates that it may be difficult to determine the best varieties to provide resistance to diseases in New York.

Entry	Rows	FHB incidence (%)		Spot blotch (%)		Scald (%)
		Helfer ^x	Ketola	Helfer	Ketola	Ketola
02Ab431	2	41.50 abcde	8.67 c	11.25 ab	2.33 b	0.00 b
02Ab669	2	32.50 cde	8.00 c	15.00 ab	2.67 b	0.67 b
02Ab671	2	37.00 cde	8.00 c	6.25 b	2.67 b	0.00 b
2Ab08-X05W061-208	2	39.00 bcde	16.67 bc	12.50 ab	2.00 b	0.00 b
2Ab08-X05W061-216	2	45.50 abcde	22.66 bc	12.50 ab	5.00 b	0.00 b
AC 07/022/2	2	20.50 e	5.33 c	22.50 a	25.00 a	0.00 b
AC 07/041/33	2	43.50 abcde	19.33 bc	13.33 ab	6.50 ab	0.00 b
AC 07/041/8 (Flavia)	2	56.00 abcd	50.66 ab	7.50 b	8.50 ab	0.00 b
Charles	2	39.50 bcde	30.66 abc	10.75 ab	2.17 b	0.00 b
Endeavor	2	28.50 de	17.33 bc	10.75 ab	10.67 ab	0.17 b
KWS Scala	2	46.00 abcde	18.00 bc	5.00 b	3.33 b	4.67 a
KWS Stella	2	44.00 abcde	30.66 abc	3.00 b	8.00 ab	0.00 b
Nectaria	2	44.00 abcde	16.67 bc	16.67 ab	6.67 ab	0.00 b
SY Mezmaar	2	42.00 abcde	13.33 bc	15.00 ab	2.00 b	0.33 b
SY Tepee	2	53.00 abcd	27.34 bc	12.50 ab	4.00 b	0.00 b
WintMalt	2	46.00 abcde	25.34 bc	7.00 b	3.33 b	1.00 b
03/220/158	6	67.50 a	68.66 a	3.00 b	2.17 b	0.00 b
10467p2	6	60.66 abc	28.00 bc	13.33 ab	4.67 b	0.00 b
10467r2	6	47.00 abcd	27.34 bc	7.50 b	5.00 b	0.00 b
10467r4	6	63.50 ab	34.66 abc	12.00 ab	4.33 b	0.00 b
6Ab08-X03W012-5	6	35.34 cde	23.34 bc	6.50 b	2.33 b	0.00 b
Saturn	6	36.50 cde	41.34 abc	3.00 b	9.00 ab	0.00 b
HSD ($P=0.05$)		28.66	39.77	13.90	20.05	2.38

^x Column numbers followed by the same letter are not significantly different at $P=0.05$ as determined by Tukey's HSD