BARLEY (*Hordeum vulgare* 'Conlon')
Fusarium head blight (scab); *Fusarium graminearum*
Spot blotch; *Bipolaris sorokiniana*

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Evaluation of conventional and OMRI approved foliar fungicides for control of Fusarium head blight and foliar diseases of spring malting barley in New York, 2015.

The fungicide trial was conducted at the Musgrave Research Farm in Aurora, NY in a Lima silt loam soil planted with the spring malting barley variety 'Conlon' sown at 100 lb/A with a no-till drill into wheat stubble on 1 May. Fourteen foliar treatments (combinations of products, amounts, and timings of fungicides) were arranged in a randomized complete block design with four replicates. Subplots were 20 x 10 ft including 15 rows with 7.5 in.-row spaces. The plots were fertilized at planting (200 lb/A of 10-20-20) and topdressed on 21 May (60 lb/A of urea, providing an additional 27.6 lb/A of nitrogen). Fungicides were applied on 12 Jun at Feekes growth stage (FGS) 9 (ligule of flag leaf just visible) and on 19 Jun at FGS 10.5 (head emergence), depending on the treatment. All plots were inoculated with a conidial suspension of *Fusarium graminearum* (40,000 conidia/ml) on 12 Jun and 19 Jun, after fungicide applications were completely dried, to augment natural inoculum for initiation of Fusarium head blight (FHB). Treatments were applied with a backpack sprayer with 8002DG flat fan nozzles, 18.5-in. apart, pressurized at 34 psi, and calibrated to deliver 20 gal/A. The *F. graminearum* was applied by a tractor-mounted sprayer with TJ-60 8003VS nozzles, 20-in. apart, pressurized at 30 psi, and calibrated to deliver 20 gal/A. Incidence and severity (percent of symptomatic spikelets on symptomatic heads) of FHB in each plot were rated on 2 Jul and used to calculate FHB Index, where FHB index = (FHB severity * FHB incidence)/100. Spot blotch, caused by *Bipolaris sorokiniana* was rated on 2 Jul as percent disease severity on flag leaves (average rating for whole plot). Grain was harvested on 31 Jul from a 20 x 5 ft area in each subplot using an Almaco plot combine. Grain moisture, grain yield, and test weight for individual plots were recorded and yield and test weights were recalculated to bu/A at 14.5% moisture. Analysis of deoxynivalenol (DON) content in grain was conducted in the US Wheat and Barley Scab Initiative-supported mycotoxin analysis laboratory at the University of Minnesota, St. Paul, MN. Treatment means were calculated, subjected to analysis of variance, and separated by Fisher's protected LSD test ($P = 0.05$).

None of the conventional or OMRI approved fungicide treatments applied at FGS 10.5 significantly reduced foliar diseases, FHB, or DON, nor had an effect on yield as compared with the non-treated control. Most importantly, none of the treatments reduced DON below the 1 ppm threshold for purchasing malting barley by malt houses in NY. Applications of Priaxor, Aproach, Stratego YLD or Twinline at FGS 9 also did not significantly reduce leaf blotch relative to the non-treated control.

Product, rate/A, Feekes growth stage at application	Spot blotch (%)	FHB index	DON (ppm)	Yield (Bu/A)
Non-treated control	1.4	0.2	1.0	67.6
Aproach 9 fl oz FGS 9, then Caramaba 13.5 fl oz FGS 10.5	0.9	0.3	1.4	69.3
Priaxor 4 fl oz, then Caramba 13.5 fl oz FGs 10.5	1.3	0.2	1.3	64.6
Twinline 9 fl oz FGS 9, then Caramba 13.5 fl oz FGS 10.5	1.5	0.3	1.1	59.9
Stratego YLD 4 fl oz FGS 9, then Prosaro 6.5 fl oz FGS 10.5	0.8	0.2	1.1	68.6
Caramba 13.5 fl oz FGS 10.5	1.3	0.3	1.3	76.5
Prosaro 6.5 fl oz FGS 10.5	1.4	0.1	1.4	76.7
Champ WG 1.06 lb FGS 9, then Champ WG 1.06 lb FGS 10.5	1.5	0.2	1.6	66.4
Badge SC 28.8 fl oz FGS 9, then Badge SC 28.8 fl oz FGS 10.5	1.1	0.2	1.7	63.7
Taegro 5.2 oz FGS 9 followed by Taegro 5.2 oz FGS 10.5	1.3	0.2	1.4	69.9
LSD (P=0.05)	NS*	NS	NS	NS
CV (%)	44.3	84.3	29.8	15.8

* Column means are not significantly different at P=0.05 as determined by Fisher's protected LSD