WHEAT (*Triticum aestivum* 'Pioneer 25R34')
Fusarium head blight (scab); *Fusarium graminearum*
Stagonospora blotch; *Parastagonospora nodorum*
Septoria blotch; *Zymoseptoria tritici*

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Evaluation of foliar fungicides for control of Fusarium head blight and foliar diseases of winter wheat 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 soft red winter wheat variety 'Pioneer 25R34' sown at 118.8 lb/A following soybean harvest on 7 Oct 2014. Eleven foliar treatments (combinations of products, amounts, and timings of fungicides) were arranged in a randomized complete block design with four replicates. Subplots were 20 × 10 ft including 15 rows with 7-in.-row spaces. The plots were fertilized at planting (200 lb/A of 10-20-20) and topdressed on 21 Apr (60 lb/A of urea, providing an additional 27.6 lb/A of nitrogen). Fungicides were applied on 21 May at Feekes growth stage (FGS) 9 (ligule of flag leaf just visible), 2 Jun at FGS 10.51 (begin anthesis), and 7 Jun (5 days after flower initiation) depending on the treatment. All plots were inoculated with a conidial suspension of *Fusarium graminearum* (40,000 conidia/ml) on 2 Jun and 7 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 of FHB were rated for each plot on 22 Jun and used to calculate FHB Index, where FHB index = (FHB severity * FHB incidence)/100. Foliar diseases, caused by *Parastagonospora nodorum* and *Zymoseptoria tritici* were rated on 22 Jun as percent disease severity on flag leaves (average rating for whole plot). Grain was harvested on 23 Jul from a 20 × 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 13.5% moisture. Analysis of deoxynivalenol (DON) content in grain was conducted in the U.S. 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).

All treatments significantly reduced the severity of fungal leaf blotches on flag leaves and FHB index as compared with the non-treated control, though overall disease pressure was fairly low. All treatments, except Tebustar at FGS 10.51 significantly reduced DON as compared with the non-treated control. Caramba at 13.5 fl oz applied at FGS 10.51 resulted in significantly greater FDK than any other treatment, whereas Caramba at 17 fl oz applied at the same timing resulted in the lowest FDK. Early applications of Priaxor, Stratego YLD or TwinLine provided no additional reduction of leaf blotches than any treatments of Prosaro or Caramba alone at FGS 10.51. Whereas early application of Aproach did result in a significant reduction of leaf blotches as compared with treatments of Prosaro (6.5 fl oz) or Caramba (13.5 fl oz) alone at FGS 10.51. Caramba applied at the higher rate (17 fl oz) at flowering did not result in greater reduction in FHB, yield or DON than Caramba at the lower rate (13.5 fl oz). Prosaro applied at the higher rate (8.2 fl oz) at flowering or at the lower rate (6.5 fl oz) five days after flowering did not result in any significant differences in FHB, FDK, yield or DON than when applied at the lower rate (6.5 fl oz) at flowering. DON concentrations were not reduced further by addition of any other material to any Prosaro or Caramba application at flowering, thus providing further evidence that these are the materials and timing of choice for DON suppression. DON concentrations for all treatments, including the non-treated control were below the 2 ppm threshold. Yield was significantly greatest for plots treated with Aproach at FGS 9 followed by Prosaro (6.5 fl oz) at FGS 10.51, when compared with all other treatments that included Prosaro or Caramaba applications at FGS 10.51.

Product, rate/A, Feekes growth stage at application	Leaf blotch (%)	FHB index	FDK (%)	DON (ppm)	Yield (bu/A)
Non-treated control	4.3 a*	4.8 a	7.3 bc	1.7 a	78.2 d
Aproach 2.08 SC, 9 fl oz FGS 9, fb Prosaro 421 SC, 6.5 fl oz FGS 10.51	0.5 d	1.0 bc	4.0 de	1.0 bcd	98.4 a
Stratego YLD 4.18 SC, 4 fl oz FGS 9, fb Prosaro 421 SC, 6.5 fl oz FGS 10.51	0.8 bcd	1.5 bc	6.0 bcd	1.2 bc	87.1 bc
TwinLine 1.75 EC, 9 fl oz FGS 9, fb Caramba 0.75 EC, 13.5 fl oz FGS 10.51	0.6 cd	1.0 bc	3.0 de	0.9 cd	89.3 bc
Caramba 0.75 EC, 13.5 fl oz FGS 10.51	0.9 bc	1.2 bc	11.3 a	1.0 bcd	83.8 cd
Caramba 0.75 EC, 17 fl oz FGS 10.51	0.6 cd	0.6 c	1.7 e	0.7 d	88.8 bc
Priaxor 4.17 SC, 4 fl oz, fb Caramba 0.75 EC, 13.5 fl oz FGs 10.51	0.6 cd	0.6 c	6.0 bcd	1.0 bcd	87.3 bc
Prosaro 421 SC, 6.5 fl oz FGS 10.51	0.9 bc	0.6 c	3.0 de	0.7 d	87.6 bc
Prosaro 421 SC, 8.2 fl oz FGS 10.51	0.5 d	0.9 bc	4.3 cde	0.7 d	85.9 bcd
Prosaro 421 SC, 6.5 fl oz 5 days after FGS 10.51	0.9 bc	1.0 bc	2.5 e	0.7 d	86.3 bcd
Tebustar 3.6 L, 4 fl oz FGS 10.51	1.0 b	2.0 b	8.0 b	1.4 ab	93.9 ab
LSD (P=0.05)	0.36	1.35	3.09	0.44	8.56
CV (%)	101.5	105.7	62.5	42.0	8.3

*Column numbers followed by different letters are significantly different at P=0.05 as determined by Fisher's protected LSD