

ONION, YELLOW (*Allium cepa* ‘Saddleback’)
Stemphylium Leaf Blight; *Stemphylium vesicarium*
Purple Blotch; *Alternaria porri*
Botrytis Leaf Blight; *Botrytis squamosa*

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Evaluation of fungicide treatments for control of foliar diseases in onion in Wisconsin, 2020.

An onion fungicide efficacy trial was established on 10 April in a commercial field on muck soil in Endeavor, Wisconsin using a standard commercial planter. The experimental design consisted of 4 replicates arranged in a randomized complete block design. Each treatment plot consisted of 5-ft-wide beds with four 20-ft-long rows spaced 15 in. apart with 2-ft non-sprayed buffer alleys between plots in the same row. Insect, weed, and fertility management was carried out as per commercial standards for the production region and were applied by the grower cooperator. Naturally occurring inocula of all three pathogens were present from nearby agricultural production fields. Fungicide treatments were applied on 28 Jun; 5, 12, 19, 26 Jul; and 2, 9, 16 Aug for a total of 8 applications using a CO₂ backpack sprayer equipped with four TeeJet 8002VS nozzles spaced 19-in. apart and calibrated to deliver 35 gal/A at a boom pressure of 40 psi. The severity of total, combined foliar disease of the two center rows was rated on 3, 20 Jul; 3, 17, 29 Aug using the Horsfall-Barratt rating scale (0-11 rating with 0=no disease, 11=100% disease severity). The Area Under the Disease Progress Curve (AUDPC) was determined by trapezoidal integration and then converted into Relative AUDPC (RAUDPC), i.e. percentage of the maximum possible AUDPC for the whole period of the experiment. On 7 Sep, onions in the center five feet of the two center rows were pulled, hand-topped, and weighed. Data were analyzed using ANOVA ($\alpha=0.05$) and Fisher's LSD at $\alpha=0.05$.

There were no significant differences across treatments for plot yield. Disease pressure was relatively low throughout the trial period, but all fungicide programs significantly reduced foliar disease when compared to the non-treated control. There was no phytotoxicity for any of the treatments.

Fungicide and Rate/A	Application Timing ^x	Yield (cwt/A)	RAUDPC ^y
Non-treated Control	-	24.4	0.266 b
Bravo WS 720SC 2.0 pt + Dithane 75DF 2.0 lb	1,2		
Quadris Top 2.71SC 12.0 fl oz + Bravo WS 720SC 1.0 pt	3,5,7		
Endura 70WG 5.0 oz + Dithane 75DF 2.0 lb	4,6		
Dithane 75DF 2.0 lb	8	23.5	0.198 a
Bravo WS 720SC 2.0 pt + Dithane 75DF 2.0 lb	1		
LifeGard WG 4.5 oz/100 gal water + Dithane 75DF 2.0 lb	2		
Quadris Top 2.71SC 12.0 fl oz + LifeGard WG 4.5 oz/100 gal water	3,5,7		
Endura 70WG 5.0 oz + Dithane 75DF 2.0 lb	4,6		
Dithane 75DF 2.0 lb	8	25.3	0.198 a
Bravo WS 720SC 2.0 pt + Dithane 75DF 2.0 lb	1,2		
Quadris Top 2.71SC 12.0 fl oz + Bravo WS 720SC 1.0 pt	3,5,7		
Luna Tranquility 4.16SC 27.0 fl oz + Dithane 75DF 2.0 lb	4,6		
Dithane 75DF 2.0 lb	8	23.5	0.176 a
Bravo WS 720SC 2.0 pt + Dithane 75DF 2.0 lb	1,2		
Quadris Top 2.71SC 12.0 fl oz + Bravo WS 720SC 1.0 pt	3,5,7		
Miravis Prime 3.33SC 11.4 fl oz + Dithane 75DF 2.0 lb	4,6		
Dithane 75DF 2.0 lb	8	24.3	0.212 a
Bravo WS 720SC 2.0 pt + Dithane 75DF 2.0 lb	1,2		
Trivapro 2.21SE 18.5 fl oz + Bravo WS 720SC 1.0 pt	3,5,7		
Luna Tranquility 4.16SC 27,0 fl oz + Dithane 75DF 2.0 lb	4,6		
Dithane 75DF 2.0 lb	8	24.1	0.206 a

^xFungicide application dates: 1=28 Jun, 2=5 Jul, 3 = 16 Jul, 4= 19 Jul, 5 = 26 Jul, 6 = 2 Aug, 7 = 9 Aug, 8 = 16 Aug

^yRAUDPC= Relative Area Under the Disease Progress Curve.

^zColumn numbers followed by the same letter are not significantly different at P=0.05 as determined by Fisher's Least Significant Difference (LSD) test.