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# Characterizing the Agronomic Benefits of Solatenol Fungicide Tank-Mixture Applications in Nebraska Field Corn, 2014

J. D. Harbour

*University of Nebraska-Lincoln*, [jharbour2@unl.edu](mailto:jharbour2@unl.edu)

T. A. Jackson-Ziems

*University of Nebraska-Lincoln*, [tjackson3@unl.edu](mailto:tjackson3@unl.edu)

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**Characterizing the agronomic benefits of Solatenol fungicide tank-mixture applications in Nebraska field corn, 2014.**

The objective of the trial was characterize Solatenol fungicide tank mix programs and compare performance to Quilt Xcel for gray leaf spot (GLS) efficacy. Corn was grown under normal, irrigated agronomic practices at the South Central Ag Lab near Clay Center, NE. Soils were a silt loam with 6.7 pH and 1.8 % organic matter. Reduced tillage was performed to the field prior to planting. Corn (G11U58-3111 susceptible to GLS) was planted at approximately 34,000 seed/A on 20 May. Eight treatments were arranged in a randomized complete block design with six replications. Fungicides were applied using a high-clearance sprayer equipped with a 10 ft wide spray boom housing six TeeJet XR11002 spray nozzles with 20 inch spacing. Spray solutions were delivered at 3 mph with 40 psi compressed air for a spray volume of 20 gpa. The fungicide treatments were applied to V5 growth-stage corn on 19 Jun and to R1 corn on 21 Jul. Plots were rated for stay green, and area under the disease progress curve (AUDPC) was calculated from four rating dates of 19 Jun, 28 Jul, 12 Aug, and 13 Sep, 2014. Corn stalk lodging was assessed (19 Nov) by pushing 20 random stalks from the standing position at shoulder height to the 45° position from vertical. Plots were harvested on 19 Nov from the center two rows using a Gleaner K2 plot combine and grain corrected to 15.5% moisture. All treatments were analyzed using ANOVA and means separated using Fisher’s protected LSD with  $P = 0.10$ . Precipitation was greater than normal in Jun (8.9 in. vs 2.9 in.), and 3.3 in rain fell on 21 Jun. The longest dry spell occurred from 11 Jul to 31 Jul. An overhead linear sprinkler irrigated the trial on 22 Jul, 29 Jul, and 2 Aug at approximately 1.75 in. water for each date. Average monthly temperatures for Jul and Aug were in the mid-80s (°F). Temperature (°F) highs were warmer than average in May, and the longest warm spell occurred from 18 May to 7 Jun. The hottest month was Jul with a high of 99°F on 21 Jul. High temperatures at the R1 growth stage ranged from the low-90s (°F) and decreased to the mid-70s (°F).

Fungicides applied at V5, R1, or V5 + R1 did not cause phytotoxicity to corn (data not shown). GLS disease severity was first measured 7 DAT (R1) and remained relatively low by 44 DAT (R1). AUDPC values were nonsignificant between fungicides applied early and the nontreated check. AUDPC values were significantly greater when fungicides were applied early versus late, while AUDPC values were significantly lower with Quilt Xcel applied twice compared to the other treatments. Fungicide treatments were not significantly different for stay green, push lodging, and yield.

Treatment, Formulation, Rate/A <sup>z</sup>	Timing <sup>y</sup>	AUDPC <sup>x</sup> %	Stay Green <sup>w</sup> %	Push Lodging <sup>v</sup> %	Yield bu/a
Quilt Xcel 3.18 SE, 10.5 oz	V5	248.9 a <sup>u</sup>	60.0	3.3	196.9
Solatenol 0.84 EC, 4.1 oz, + Quadris 2.08 SC, 6 oz + Tilt 3.6 EC, 4.03 oz	V5	225.4 a	58.5	2.9	213.5
Quilt Xcel 3.18 SE, 10.5 oz	R1	125.5 c	59.3	1.9	199.9
Solatenol 0.84 EC, 4.1 oz, + Quadris 2.08 SC, 6 oz + Tilt 3.6 EC, 4.03 oz	R1	157.3 b	70.1	3.3	194.6
Quilt Xcel 3.18 SE, 10.5 oz fb					
Quilt Xcel 3.18 SE, 10.5 oz	V5 fb R1	74.0 d	54.1	3.0	211.4
Solatenol 0.84 EC, 4.1 oz, + Quadris 2.08 SC, 6 oz + Tilt 3.6 EC, 4.03 oz					
fb					
Solatenol 0.84 EC, 4.1 oz, + Quadris 2.08 SC, 6 oz + Tilt 3.6 EC, 4.03 oz	V5 fb R1	116.1 c	62.5	1.6	195.8
Nontreated Check	-	230.2 a	52.4	2.6	192.8
CV %		6.69	21.36	51.55	11.85

<sup>z</sup> All fungicide treatments were applied with NIS @ 0.25% v/v.

<sup>y</sup> V5 application = 19 Jun 2014; R1 application = 21 Jul 2014.

<sup>x</sup> Area under the disease progress curve calculated from four rating dates of 19 Jun, 28 Jul, 12 Aug, and 13 Sep, 2014.

<sup>w</sup> Stay green was determined by visually estimating as a percentage the amount of green foliage within the plot on 30 Sep, 2014.

<sup>v</sup> Push lodging = % lodged stalks when pushed from shoulder height to the 45° position from vertical; 29 Oct, 2014.

<sup>u</sup> Data followed by the same letter or without letters within the column are not significantly different at  $P = 0.10$  according to Fisher’s protected LSD test.