

Evaluating Effectiveness of a Sooty Blotch and Flyspeck Warning System at Three Commercial Orchards in Central Iowa

Adam Sisson, graduate student
 Mark Gleason, professor
 Jean Batzer, assistant scientist
 Department of Plant Pathology

Introduction

The Brown/Sutton/Hartman sooty blotch flyspeck (SBFS) warning system, developed in North Carolina and modified in Kentucky, extends the period between first-cover and second-cover fungicide sprays until a total of 175 hours of wetness has been measured in the orchard canopy. After second cover, sprays are made at two-week intervals until harvest.

We compared the effectiveness in suppressing SBFS and other summer diseases (secondary scab and fruit rots) in three commercial orchards using the SBFS warning system compared with a calendar-based spray regime.

Materials and Methods

Three central Iowa cooperators tested the impact of the Brown/Sutton/Hartman SBFS warning system performance in relation to a 14-day interval calendar-based control regime. Trials were conducted with Fevold's Apple Ridge Orchard in Iowa Falls, Henry's Berry Patch near Nevada, IA, and Black's Center Grove Orchard near Cambridge, IA. Two cooperators set aside blocks of five trees cv. Golden Delicious and one cooperator set aside one Gala, one Chieftain, and three Golden Delicious trees.

Spectrum WatchDog™ electronic leaf wetness sensors were placed in the lower canopy of an apple tree in each orchard and monitored weekly. Growers were kept informed of the accumulated hours of leaf wetness and advised to spray with Topsin M + Captan when the 175 hour threshold was reached. Following the second cover spray, orchards were sprayed every 14 days until harvest.

At harvest, 50 apples from each tree (25 from the top half of the tree, 25 from the lower half) were evaluated for presence of codling moth, scab, bitter rot, and the severity of SBFS. Percent of apples with SBFS were analyzed using PROC GLM with orchard as block. Percent of apples with bitter rot and scab were also compared.

Results and Discussion

No statistical differences in SBFS incidence were observed between treatment regimes ($P = 0.2434$). The number of sprays using the SBFS warning system were reduced from the calendar-based treatment (Table 1). The Brown/Sutton/Hartman sooty blotch flyspeck (SBFS) warning system saved the growers an average of three sprays and was effective in controlling summer diseases.

Acknowledgements

Thanks to Mark Fevold, Dean Henry, and Steve Black who made this research possible.

Table 1. Comparison of two SBFS treatments based on dates of first and second cover, number of sprays, and the average percent of apples SBFS and number of spray applied to three commercial orchards in central Iowa.

SBFS Treatment	Grower	Date first cover	Date second cover	Mean # Sprays	Apples with SBFS (%)
SBFS warning system	1	5-25	6-23	3	10
	2	5-27	7-4		10
	3	5-27	6-26		0
Calendar	1	5-25	6-1	6	4
	2	5-27			8
	3	5-27			0