

Evaluation of Fungicidal Management of *Alternaria* Rot on Citrus Fruit in 2000-2001 Season¹

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Abstract

Alternaria fruit rot on Minneola tangelos and navel oranges can reach economically important levels in central Arizona. The objective of this study was to test the efficacy of a new fungicide in development, BAS 500, for disease management. A trial was conducted in a commercial Minneola tangelo grove with a history of *Alternaria* fruit rot. Within this grove, nine trees were sprayed monthly from August to December 2000 with BAS 500 at a rate of 0.25 lb active ingredient per acre. Another nine trees were not sprayed and served as controls. Disease severity was evaluated monthly from September 2000 to March 2001 by counting the number of infected fruit that had dropped from trees. No disease was evident on fruit from August through November, when fruit were green. By December the fruit had matured and turned color; additionally, the first fruit were detected with *Alternaria* fruit rot. In December and January there was little difference in the number of infected fruit on treated compared to nontreated trees. On the other hand, by February and March the cumulative number of infected fruit from trees treated with BAS 500 was 3.0 and 3.7 %, respectively, whereas the cumulative number of diseased fruit from nontreated trees during the same months was greater at 4.9 and 6.4 %, respectively. This study will be repeated next year with an adjusted spray schedule with the goal of increasing the level of disease control.

Introduction

Alternaria fruit rot is a fungal disease caused by *Alternaria citri*. The fungus attacks citrus fruit and occurs throughout the citrus production areas of the world. *Alternaria* rot is mostly a problem on fruit in storage; however, the disease can develop in the orchard, leading to fruit drop and economic loss. In central Arizona, the disease occurs on Minneola tangelos and navel oranges, with estimated losses up to 0.5 box of fruit per tree when disease severity is high. The effectiveness of fungicide treatments for disease control in citrus groves has been inconsistent, although certain fungicides are used to control diseases caused by other species of *Alternaria* on other agricultural crops.

The objective of this study was to test the efficacy of a new fungicide in development, BAS 500, for disease control and to determine an application schedule that will maximize the level of disease control. Achievement of this objective could provide the means to successfully manage *Alternaria* fruit rot in Arizona citrus groves.

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Materials and Methods

A field trial was established in a Minneola tangelo grove in Queen Creek, Arizona with a history of *Alternaria* fruit rot. In August 2000, nine trees within the grove were sprayed with BAS 500 at a rate of 0.25 lb of active ingredient per acre. Application of the material was accomplished with a handgun that delivered 4.5 gallons of spray mixture to each tree. Additional applications of BAS 500 were applied monthly through December. Another nine trees were not sprayed and served as controls. Disease development was evaluated monthly from September 2000 through March 2001 by counting the number of infected fruit that had dropped from trees.

Results and Discussion

No disease was evident on fruit from September through November, when fruit were green. By December the fruit had matured and turned color; additionally, the first fruit were detected with *Alternaria* fruit rot. In December and January there was little difference in the number of infected fruit from trees treated with BAS 500 compared to nontreated trees (Table 1). On the other hand, in February the cumulative number of infected fruit from trees treated with BAS 500 and nontreated trees was 3.0 and 3.7%, respectively. By March, when fruit normally have been harvested in this commercial grove, the cumulative number of infected fruit from trees treated with BAS 500 was 4.9% compared to a value of 6.4% on nontreated trees. This study will be repeated next year with an adjusted spray schedule with the goal of increasing the degree of disease control achieved.

Table 1. *Alternaria* fruit rot on Minneola tangelo in 2000-2001 season.

Month	Percent diseased fruit	
	BAS 500	Nontreated
September	0.0	0.0
October	0.0	0.0
November	0.0	0.0
December	0.5	0.7
January	2.4	2.7
February	3.0	4.9
March	3.7	6.4