

EVALUATION OF ACTIGARD (ACIBENZOLAR-S-METHYL) AND BACTERICIDE SPRAYS FOR SUPPRESSING BACTERIAL SPOT OF PEPPER IN TWO FIELD TRIALS

*F. Hunt Sanders, Jr., Disease Management Specialist
David B. Langston, Jr., Extension Plant Pathologist
Michael J. Foster, Research Professional I
University of Georgia, Tifton, GA 31794*

Introduction:

Bacterial spot of pepper, caused by the bacterium *Xanthomonas campestris* pv. *vesicatoria*, is a major disease of bell pepper grown in Georgia that occurs every year. Copper + maneb sprays can be effective at suppressing bacterial spot, however, copper resistance is common and these sprays do not provide adequate protection in periods of high disease pressure. The efficacy of Actigard (acibenzolar-s-methyl) and bactericide sprays were evaluated for the suppression of bacterial spot of pepper.

Material and Methods:

Fall field trials were conducted in two consecutive years (2008-2009) on bell peppers (*Capsicum annuum* 'Aristotle'). Bell peppers were transplanted onto fumigated white plastic mulch beds spaced on 6-ft centers with a 30-in bed top. Planting pattern consisted of double rows with 1-ft plant spacing within rows and 15-in between rows. All treatment plots were 15-ft long with 30 plants per plot with 10-ft unplanted borders between plots. The treatments were arranged in a randomized complete block design with four or five replications. In 2008, only one application of Actigard was applied to seedlings prior to transplanting at 1 ounce per acre (oz/A) using a CO₂ backpack sprayer calibrated to deliver 80 gallons per acre (GPA). In 2009, the initial 1 oz/A application of Actigard was applied one day after planting using a CO₂ backpack sprayer calibrated to deliver 40 GPA and two subsequent applications of Actigard were applied at 10 day intervals at rates of 0.5 oz/A or 0.25 oz/A at 40 GPA using a Lee Spray Trac plot sprayer. Bactericide treatments were applied weekly, and the first three applications were applied at 40 gal/A. The remaining bactericide treatments were applied using four drop nozzles and the boom was calibrated to deliver 60 gal/A. Plants were inoculated both years by inoculating 3 plants in each plot with *Xanthomonas campestris* pv. *vesicatoria* pepper race 10 after the second bactericide spray. Plots were evaluated by rating either disease incidence or disease severity once a week after the peppers were inoculated. Plots were harvested both years until peppers no longer produced fruit.

Results and Discussion:

In 2008 plots treated with one, at plant application of Actigard and weekly sprays of Kocide 3000 (1.25 lb/A) + Manex at (1.6 qt/A) had less disease than untreated plots and plots treated weekly with Kocide 3000 (1.25 lb/A) + Manex (1.6 qt/A), and they were the only plots that out-yielded the untreated check. In 2009, plots treated with three applications of Actigard plus weekly sprays of Kocide 3000 (1.25 lb/A) + Penncozeb (2 lb/A) and biweekly rotations of Quintec and agramycin were the only plots that out-yielded plots treated with weekly applications of Kocide 3000 (1.25 lb/A) + Penncozeb (2 lb/A) and the untreated control. Actigard has proven to be an effective tool in

suppressing bacterial spot in our trials for two years, and we will continue to evaluate Actigard in program trials with bactericide rotations in the future to determine the best way to use this product in pepper production.