

PROGRESS REPORT – 2002

TITLE: Mite Management in Nurseries and Production Fields

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OBJECTIVES:

1. To determine source and species of mites on strawberries.
2. To evaluate miticides and predatory mites in plant nurseries.
3. To encourage mite management adoption.

JUSTIFICATION:

North Carolina State University Plant Disease and Insect Clinic records continue to document the importance of mites on strawberries. Grower reports and observations support problems with mites and their management. Most growers reported at preplant meetings that they had mites in 2002. They also used up to 6 applications with most making at least 2 applications. Only a very few use predatory mites. Also plant nurseries remain unaware or do not report their mite management strategies and tactics.

METHODOLOGIES:

Mites collected from plant nurseries and grower fields were identified in the plant disease and insect clinic. Growers were encouraged to submit tips and plugs as well as mite samples for identification. Miticides were compared in grower's fields and new miticides were introduced into production and resistance management systems. Growers were requested to obtain spray records from plant production nurseries. Predatory mites were also released into grower fields to evaluate method of application and various rates. Predatory mites were also introduced into plant production nurseries.

RESULTS:

Mite identifications indicated the predominant mite species to be the two-spotted spider mite. Indications remain that mites come on plants and move into plantings from adjacent vegetation and weed hosts. Lack of rotation of land and planting continually in the same field sites promotes mite establishment. Resistance to miticides also exists as a result of limited crop, land and class of miticides used and rotated. Predatory mite establishment was difficult in the plant nursery due to excessive misting. Spider mites were present in one shipment to Florida. The subsample in North Carolina contained no plant feeding or predatory mites. A large planting will be tracked in Florida as well as subsample small plantings in Florida and North Carolina.

Information obtained has been shared at preharvest tours and preplant meetings. Presentations at the Strawberry EXPO and county meetings have stressed mite management. Colored insect and mite identification sheets along with a large color insect IPM poster has been prepared and shared with county extension agents and growers in North Carolina and in the southeast. Power point presentations on mite management were prepared and presented at various meetings. Newsletter reports and recommendations have been released for grower use. One table on relative effectiveness of various miticides has been well received.

CONCLUSIONS:

Mites continue as a major pest on strawberry in North Carolina. Two-spotted spider mite is the main species involved. Source of mites remains connected to plant nurseries and to movement from alternate hosts nearby. Lack of rotation of land and of chemical classes of miticides encourages mite buildup. Little use of predatory mites exists in grower fields and none in plant nurseries. Some of the reduced risk miticides like Savey and Acramite integrate well into a mite management program.

IMPACT STATEMENT:

Mite management strategies and tactics have been refined and introduced at several venues. Various media have assisted in IPM adoption of proven practices. Grower awareness and plant grower involvement have increased and further adoption of successful elements of mite management await. Cooperative interests exist in North Carolina and Florida and further studies are planned. Information on relative effectiveness tables of various miticides has helped in miticide selection to avoid the development of resistance. The value of crop and land rotation exists and awaits adoption by growers. A total approach to mite management from plugs to harvested fruit demands attention throughout the production system.