

Nursery Pest Prediction and Information Exchange

Dan Horton, Entomology-Athens, UGA

Pest modeling, which uses local environmental data to anticipate the on-set of pest events with greater precision than is otherwise possible, has become an important IPM tool in many cropping systems. In general, insect and mite models have worked best in cooler climates where there are definitive dormancy periods. A clear-cut winter simplifies decisions as to when the heat-unit accumulation central to many pest models should begin. Setbacks in 1997 made it clear that my original proposal were not truly applicable for the Southeast. Recent very successful work from the University of Maryland was used as the 1997 experimental design template. Since that point efforts have centered on developing a practical system for improving anticipation of southeastern nursery insect and mite pest events. The concept of sharing pest information between GGIA member nurseries via a CANR web page has become the focal point of this work. Web page development is on-going. Additional 1999 funding was not sought.

1997:

Pest Modeling. Initial insect pest model development efforts at CANR were patterned after a successful UMD modeling effort for arthropod pests of herbaceous perennials. McCorkle Nurseries provided funding and gave input as to their most often-seen insect and mite pests. Selections were made from that group of pests, emphasizing those felt to be most amenable to modeling. Small representative plant populations were removed from the nursery and placed in the CANR facility adjacent to weather collection equipment.

Pests were monitored weekly at the CANR from early-spring to mid-summer, less so as it became apparent that we were not going to get the hoped-for pest infestations. By mid-summer it became apparent that small, on-site plant populations could not be depended on to develop the necessary insect and mite outbreaks.

Satellite weather monitoring vs On-Site Monitoring. A comparison between weather data from satellite weather monitoring and sophisticated on-site monitoring equipment was included to determine if data from easily maintained, inexpensive satellite weather services would be sensitive enough to support pest monitoring. Comparisons were marred by on-site equipment failures. However, simultaneous fruit studies in GA and in other states validated that the satellite data were sufficiently sensitive to support pest modeling efforts.

1998:

Efforts were re-oriented to emphasize whole-nursery scouting as a means for generating a greater volume of pest occurrence input. This was a pragmatic first step to facilitate better anticipation of pest life cycle events.

A primary, long-term change in direction was adopted by centering efforts on the more pragmatic goal of creating an ornamental IPM web page. The web page as a logical means of facilitating better anticipation of pest events. A doctoral student in entomology is providing the needed technical support for on-going development of an ornamental IPM web page. The ornamental

pest web page will function first as an ornamental pest hot-line for GA nursery producers. Archiving of pest events at nurseries from around the state will also be included, which will help address long-term goals for improving anticipation of pest events. As many nurseries now have good weather data, on-site weather data will be collected where available. The web page is also being set up to serve as a reference source or conduit to reliable electronic nursery IPM resources in other states.