

Work Area #8 Pesticide Efficacy Testing

Project 1 Shifts in Pesticide Usage

Methodology: Pesticide usage records from 1996 through 1998 were obtained from seven pepper farms across South Florida ranging in size from 35 to 900 acres or a total of 2403 acres. The total amount of active ingredient applied per acre was calculated for each farm and insecticide used. These amounts were added up for all farms and divided by the total acreage to obtain the mean amounts of active ingredient applied per acre. The average of the 1996-97 spring and fall seasons represented the baseline of insecticide usage. The amounts of active ingredient applied in the 1997-98 spring and fall season were expressed as a percentage of the 1996-97 baseline data.

Results: The results are shown in Table 13. A total of 30 active ingredients were recorded, of which 24 were used in 1996-97, 17 in spring 1997-98, and 25 in fall 1997-98. Five products (carbaryl, PROKIL, diazinon, NPV virus, and oxydemeton-methyl) that were used in 1996-97 were not used in 1997-98. There were six new products in 1997-98 (crop oil, dimethoate, esfenvalerate, garlic/sugar/capsaicin and spinosad). Seven products (acephate, azinphos-methyl, chlorpyrifos, endosulfan, permethrin, pyrethrins, and rotenone) were used in the 1997-98 fall but not in the spring crop. Products that saw an increase in both spring and fall season usage were cyfluthrin, cyromazine, dicofol, imidacloprid, and neem seed extract. Products that were not used in the spring crop but whose use increased in the fall crop were acephate, azinphos-methyl, and rotenone. Endosulfan's usage was up with only 4% in the fall crop and can be regarded as almost unchanged; it was not used in the spring crop. The use of azadaractin, *B.t.*, methomyl and sulfur was down in both seasons. Chlorpyrifos, permethrin, pyrethrins, and Rotenone were down in the fall, and not used at all in the spring crop. Oxamyl was down in the fall, but up in the spring crop. It is important to note that there were more cases where the environmentally damaging organophosphates and carbamates were either not used or reduced, compared to the few cases where their use was increased. The increase in oxamyl was directed at pepper weevils.

Work Area #9 Thrips Management and Taxonomy Software

THRIPS is a computerized knowledge base for the identification and management of vegetable thrips (Frantz et al., 1997). It is a 7 MB program that runs on Windows. Nine major species of thrips in the United States and *O. insidiosus*, are comprehensively covered by accurate field identification, management tactics, and diseases vectored. The product has been well received thus far, and we are planning ways to improve the marketing of the product.