# Towards sustainable management of the whitefly bemisia tabaci in egypt

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The cotton whitefly, Bernisia tabaci (Gennadius), has become an increasingly important pest of some crops in Egypt. Severe attack reduces crop yield by impeding plant growth, retarding flowering and reducing the quantity and quality of yield, and the subsequent transmission of viral diseases often results in complete yield-loss. In all crops, the addition of organophosphates as esterase inhibitors and pyrethroid synergists is common and, since the mid-1980s, Egyptian farmers have also used large amounts of carbamates such as carbosulfan and aldicarb both as soil and foliar treatments. Thiamethoxam, pymetrozine and imidacloprid have recently been registered for use in Egypt and pyriproxifen is under trial (Sherif Ayoub, Novartis, Egypt, pers comm).Three collections of B. tabaci were made from cotton and eggplants at the beginning of the growing season (2000) in Egypt. These displayed marked resistance to the carbamates carbosulfan (RFs.ca. 20 to 50-fold) and aldicarb (RFs.ca. 40 to 80-fold) and moderate resistance to the pyrethroids cypermethrin (RFs.10 to 30-fold) and lambda-cyhalothrin (RFs.ca. 10 to 25-fold). They displayed no resistance to the organophosphates, profenofos and pirimiphos methyl, or to imidacloprid. Another strain, collected at the end of the growing season (2001) from the same location as an earlier collection, differed markedly in its response. In that strain, resistance to carbosulfan remained high (RFs.ca 40-fold), but resistance to profenofos and cypermethrin was higher than recorded at strains collecting at the beginning of the season (RFs.ca 20 and 50-fold, respectively) and was exhibited slight resistance to imidacloprid (RFs.6-fold). None ofthe Egyptian strains collected showed resistance to pyriproxyfen. These Egyptian strains were compared to two representative Israeli strains. The differences between their resistance profiles is discussed in terms of their collection date, their geographical proximity, and the patterns of insecticide use at their sites of collection.As exemplified by the comparison of prOfenofos and pyriproxyfen effects on mortality of B. tabaci and tie parasitoid Encarsia formosa, the profenofos effects on both species could be discerned after a single application. It was also clear that pyriproxyfen had the dual effects of almost completely suppressing the whitefly populations whilst conserving parasitoid numbers.biotype Egyptian strain and 'Q' biotype Israeli strain of B. tabaci were shown to exhibit different resistant profiles and to be able to mate and give rise to hybrid offspring exhibiting intermediate levels of resistance to organophosphates and pyrethroids. Monitoring of both biotypes and resistance profiles are therefore essential to monitor the resistance status of B. tabaci in Egypt and to predict the efficacy of chemical control tools.