

Cultural Practices:

One of the guiding principles of integrated pest management is the identification of workable combinations of control tactics in order to develop more effective, sustainable, and efficient control compared to relying on any single tactic. When tactics are combined there is less opportunity for insects to develop resistance to the control measures. The following three experiments highlight how cultural practices are valuable IPM tactics.

Host plant resistance + reduced risk insecticides: When resistant plants and reduced risk insecticides are combined in a strategy, synergism may be realized in enhanced control insects. Our research indicates that reduced risk pesticides decrease the number of thrips extracted from impatiens compared with a water spray or non-inoculated control (Warnock et al., 2002). Insecticides reduced thrips levels to those found on the non-inoculated control. Some cultivars negatively impact thrips population levels without the addition of insecticides. These cultivars will be useful in IPM programs.

Trap crops: Research to determine if thrips can be lured to specific areas for localized insecticide applications promises to increase IPM management tools. Thrips are differentially attracted to verbena (Warnock and Loughner, 2004) and to yellow gerbera flowers (Blumthal et al., 2005). These crops likely will be useful in a push-pull pest management strategy where deterrents are used to repel thrips from main crops while attractive crops lure the insects to specific areas. Pesticides are then locally applied. This research has significant IPM potential.

Impact of tank mixes: Floriculture crop producers often mix insecticides in a single spray tank to reduce labor costs associated with multiple applications of insecticides. Laboratory and greenhouse assays indicate that mixing some insecticides lower the efficacy of controlling thrips compared to singularly applied insecticides (Warnock and Cloyd, 2005; Warnock and Lash, 2005). This is significant because reduced efficacy will lead to increased resistance to insecticides, increased insecticide usage to control secondary infestations, and increased worker exposure and negative environmental impacts. Identifying antagonistic tank mixes is necessary for the long-term sustainability of floriculture production.