Can we survive without organophosphates (OP)?

WSU established 15 demonstration orchards throughout WA to examine this question. This program is referred to as Areawide II, after it’s very successful predecessor, CAMP. The main goal, evaluate codling moth mating disruption programs that replace supplemental OP controls with selective insecticides (e.g. oils, growth regulators, microbials, neo-neurotoxins).

Each orchard was divided into side-by-side plots (at least 10 acres each)

- One side (OP) could choose any suitable insecticide to solve a problem
- The other (No-OP) had a restriction of using no OPs and went further to ask growers to choose the most selective alternative (e.g. Use Avass to control cutworms and not Thiodan)
- Both plots were treated with a reduced rate of hand-applied pheromones (200 disp./a) to supplement CM management.

A critical factor to the success of any IPM program is information intensive decision making

- Monitoring was conducted at each by highly trained consultants as well as WSU TREC personnel
- Virtually all potential pests were monitored with standardized protocols and data was summarized and presented to growers, weekly.

Potential pitfalls

- Removal of OPs presents some potential problems if implementation is expected by all growers
- The program is not as effective as desirable
- Pests are becoming more resistant

Growers may still be reliant on Thiodan, Carzol and possibly synthetic pyrethroids unless selective insecticides are developed for specific pests.

Insecticide use and cost

- The average number of insecticide applications was similar between the two treatments.
- The Non-OP program relied on growth regulators for CM and LR control with supplemental Assail treatments for CM, while the OP program relied on Guthion and Assail for CM and Success for LR.
- A Non-OP, pheromone-based management program can be competitive with a conventional OP program in cost and efficacy.

Conclusions

- Non-OP treatments were able to maintain CM injury equal to OP treatments, even with increased pressure
- No real change in CM injury was noted in either treatment after three years
- No pest flare-ups were encountered after three years that couldn’t be managed with Non-OP alternatives
- Potential problems with a Non-OP program are true bugs (Campylomma, Lygus, stink bugs) and woolly apple aphids,
- A complete reliance on “soft” chemicals may be limited without new alternatives for thrips and rosy apple aphids
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