

TOP 10 REASONS WHY YOUR PEST MANAGEMENT DIDN'T WORK

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#10; You didn't get the pest right



- ▣ Being able to identify the insect or mite is critical.
- ▣ This slide is only Aphids; adult, sexual, winged phase, and haploid asexual phase, and, exoskeletons of Aphids---Not Whitefly!

#9;

You ignored the “Modus Operandi” of the Beneficial

- ▣ *Encarsia* works preventatively
- ▣ They have difficulty with Honeydew
- ▣ Predatory mites (except *persimilis*) work preventatively
- ▣ They can't tolerate webbing or Honeydew



#8;

Your Beneficials don't play well with others



- ▣ *barkeri* eats *persimilis*
- ▣ *degenerans* eats *Aphidoletes*
- ▣ *californicus* eats *persimilis*
- ▣ *swirski* eats *Aphidoletes*

#7

Your Bios were improperly applied

- ▣ Piles of *cucumeris* cannot be used if *Atheta* or any soil mite is also being used
- ▣ Spider mite predators being applied to damage, rather than pest density



#6

Temperature Range



- ▣ All Beneficials have an effective Temperature Range
- ▣ Fresh *Encarsia* can control Whitefly as low as 10C, while stored *Encarsia* is ineffective below 18.7C
- ▣ Mediterranean mites, such as *swirski*, need 26C

#5

Playing the Numbers Game

- ▣ If you have 10,000 plants, each with 10 leaves, and the average number of Aphids per leaf is 10, you are the proud owner of 1 million Aphids.
- ▣ *Aphidoletes* can handle 100 aphids per adult
- ▣ You need 10,000 *Aa* to handle the population in one generation



#4

Recognizing Success

- ▣ If I see 1 *persimilis* per leaf
- ▣ If I see 1 *Aa* larvae per 100 Aphids
- ▣ If I see 75% parasitism
- ▣ If I see clean new growth
- ▣ If I see an influx of native beneficials



#3

Poor Quality Beneficials

Stored Beneficials have reduced:

- ▣ Temperature Range
- ▣ Efficacy
- ▣ Searching ability

Additionally they have:

- ▣ Shifted sex ratios
- ▣ Increased mortality
- ▣ Higher likelihood for disease



#2

Chemical Interference



- ▣ All Chemicals have some effect
- ▣ Worst case is a early application to “start clean”
- ▣ Never use the “side effects” charts as permissive documents
- ▣ Always multiply the number of weeks by 3

#1

Timing

- ▣ You have to shoot before you see the “whites of their eyes”
- ▣ If you are growing plants that are susceptible to certain pests, start preventatively.
- ▣ 2 *fallacis* per square meter will prevent significant Spider Mites for the life of the plant
- ▣ 0.1 *Aphidoletes* per square meter per week will prevent Aphids from establishing
- ▣ 0.25 *Encarsia* per square meter per week will prevent Whitefly from establishing



Conclusions

- ▣ All of the 10 points are essential
- ▣ There are 10 other points for why your program is successful
- ▣ Users of Beneficial Insects and Mites have to become confident in the products that they use and the advice that they receive
- ▣ You have to embrace the true meaning of IPM, which is; Start early (preventatively), only use chemicals as a last resort, figure out the true costs of the chemical alternatives (reduced crop yield of 10 to 25%, equipment wear, re-entry, worker health), and be realistic (zero tolerance and eradication are not realistic concepts)

