



Rules for a Successful Nursery IPM Program

SYLVIA A. SHIVES* AND KATHERINE OLIVER

University of Florida, IFAS, Manatee County Extension, 1303 17th Street West, Palmetto, FL 34221

ADDITIONAL INDEX WORDS. beneficial pests, pesticides, pest management

Implementing an integrated pest management (IPM) program in your nursery can be very rewarding. You and your workers are exposed to less toxic pesticides, and you know that you are doing your best to preserve the environment. You can advertise your plants as grown without pesticides, if none are used. And you may save money if you practice IPM properly. Plus you will not have to worry about pesticide licenses or pesticide laws. You can be very successful if IPM is handled properly. If you ignore the rules, IPM can end up as a disaster. It depends on whether you follow the “rules.” I have developed these “rules” after many years of working with nurseries attempting to implement IPM with some failures and many successes. These rules include: 1) Keep spray records for at least 6 weeks before using any beneficials. 2) Start with a small test area to prove to yourself that this can work. 3) Be honest with yourself and/or your consultant. 4) Know which chemicals you can use and which you should not use. Plan your program with the knowledge of the effects the chemicals can have on your IPM plan. 5) Use of IPM does not mean that you cannot use chemicals. 6) Be consistent. If you agree to suspend the use of certain chemicals, follow through. In my experience, this is the broken law that causes most IPM programs to fail. In my experience, anyone can have a successful IPM program if they follow basic rules.

Implementing an integrated pest management (IPM) program in your nursery can be very rewarding. Benefits of using IPM include less exposure of you and your employees to toxic pesticides; possible money savings over time; better looking plants; less time and worry spent on pesticide licenses and following pesticide laws; the personal satisfaction that you are preserving the environment by using less toxic methods of pest control; and you can advertise your plants as being “green.”

On the contrary, attempts at using IPM without following certain rules can end in utter frustration, unsalable plants, and wasted money and time. For successful IPM implementation, I have developed these rules over years of assisting nurseries in implementing IPM programs. I have experienced overwhelming successes and absolute failures firsthand. Personally, I take the failures hard. Fortunately I have experienced many more successes than I have absolute failures. Usually I don’t experience the extremes, but there are varying degrees of success. Implementing a few small changes is a success when dealing with a very resistant grower. I have learned that I cannot make a grower abide by my rules, even though I spend a lot of time trying to convince them to follow my directions. I decided to write this paper to give others guidelines to follow to keep from being one of the failures. My opinion is that it is better to keep to methods that I look at as outdated and inefficient, but work for the grower at some level, rather than to have an absolute failure using IPM and possibly have the grower suffer economic losses.

RULE NUMBER 1. The most important rule for a grower to follow is to find a consultant you trust and with whom you feel comfortable. Trust is a big issue and is absolutely necessary for the IPM program to work. It is such a big issue that I have run into people who swear that an IPM program has not worked only because the grower did not believe that it would. In other words, they did not trust their consultant. The best way to find a good

consultant is to ask other growers who are successfully practicing IPM. Another good source is people who sell you beneficials (beneficial insects), because it is in their best interest for you to be successful for obvious reasons. Trust your instincts about anyone who decide to retain. They do not have to know everything, but they need to know where to go to find the answers. It would be good for you to ask them if they are familiar with pioneers in IPM such as Dr. Lance Osborne. If they have never heard of them, be wary, because you want them to have reliable resources. Consulting is not a stagnant field. Pests and circumstances change constantly and your consultant needs a good, reliable team to help them make proper decisions in times of change. In order to know if your consultant is knowledgeable, it would be prudent for you to do a little research on people who are working in the field. That can be as easy as calling your extension agent and asking them.

One word of warning: Remember that salespeople are in business to sell you their products and lots of them (for obvious reasons). Be wary if a salesperson is trying to sell you a lot of other products and telling you that you need certain products. I have seen salesmen ruin crops by telling the grower that they need certain nutrients or chemicals when the crop was perfectly fine. Sometimes they run tests to prove to you that you need a certain product. If the plants are not showing nutrient deficiencies or signs of disease or pests, they probably do not need extra products.

RULE NUMBER 2. Follow the advice of your consultant in a timely manner—in other words as soon as possible. Depending on environmental factors, the pest can multiply exponentially, which means that their numbers can explode in a very short amount of time and cause irreparable damage to your plants. If treated quickly, obvious damage can be kept to a minimum and the pests are easier to control. If pest numbers are allowed to increase without being checked, the threshold (economically allowable) damage will be reached and it will cost more to control the high numbers of pests present. Many times the crop will need to be sprayed because it will be economically unfeasible to buy enough beneficial insects to control the damage. When that

*Corresponding author; email: sashives@ufl.edu; phone: (941) 722-4524

happens, a compatible spray needs to be used to knock down the pest numbers so that unaffordable amounts of beneficial insects will not have to be released to control the damage.

RULE NUMBER 3. Be honest with, and follow the advice of your consultant. This is the scary part, but if you feel you can trust your consultant it will be much easier to follow. Do what the consultant tells you to do. Do not sneak in a spray of toxic waste to kill a pest because you are uneasy, unless your consultant tells you to use it (and they most probably will not tell you to use it). If you have released beneficial insects, the consultant will only let you use sprays that are compatible with the specific beneficial you are using and with any you may need to use in the next few weeks. For some sprays there can be a 6-week waiting period for the residual to clear so that any beneficials you use will not be killed by the residual. If you ignore your consultant and decide to do some creative spraying on the side, you can wipe out your costly investment in beneficials in just minutes. And be aware that consultants are usually not brain dead even though they can be exposed to toxic sprays, so they can smell if you have used a spray not allowed in their program. This can destroy the trust bond between you and your consultant in addition to your expensive beneficials.

RULE NUMBER 4. Be patient. It takes time for beneficials to control pest populations. They have to physically consume or kill each pest insect individually while a spray just hits them and they are dead as in a Raid commercial. Many of these predators are vicious killing machines, but it still takes time. The up side is that, if managed properly (that means not killed by incompatible pesticides), beneficials will stay around a lot longer with little or no environmental harm. Like the pesticides of yesteryear that had half-lives of infinity, the beneficials will stay around without the damage caused by the persistent pesticides. There will also need to be a baseline of food or host pests or alternate food sources available to keep the beneficials alive and present. Work is now being done with banker plants to fulfill that need. Banker plants provide a source of insect food that will not attack the crop plant.

RULE NUMBER 5. Start small. It is easier to try something new if you do not feel your whole crop (livelihood) is in danger. By picking a small plot to work with and one major pest, you can see if the program is going to be successful for you. As long as the grower follows the rules, these pilot plots are always very successful. They convince the grower that they are not going to lose their shirts and it gives them a base on which to grow. That opportunity always presents itself as there are plenty of pests that will volunteer to come into the pilot plot so the proper beneficial can be used to combat it.

RULE NUMBER 6. Hire a scout. The consultant can scout for you or you can hire someone else to scout. The IPM plots should be scouted at least weekly. The scout should give you a record of what was found, in what numbers and where.

RULE NUMBER 7. Keep records. The grower should keep the

records given by the scout along with the grower's other records, such as spray records. These records can be used to determine if the treatment used on the plot worked, how effective the treatments were, what worked on specific pests in the past, and other information such as seasonal occurrences of the pest.

RULE NUMBER 8. Do an initial (baseline) scouting before any treatment is used. This will give you the starting point so that you can determine if the treatment used is working. Changes can be made in the treatment if, based on the starting point, you find that the treatment is ineffective.

RULE NUMBER 9. If pest numbers are high, use a chemical to bring the numbers down before introducing beneficials. IPM does not preclude the use of chemicals used judiciously. If you try to control high pest numbers by using only beneficials, it will be very expensive to buy enough beneficials to bring the pest numbers down to an acceptable level and will take a long time.

RULE NUMBER 10. Make sure the pests are identified correctly. Many chemicals and beneficials are pest specific. If you treat for the wrong pest, there is a good chance of the treatment failing. Pesticides no longer conform to the "one size fits all" rule. If you do not know what the pest is, you can collect a sample and take it to the local extension agent. If they are unable to identify the pest, they can send it to the Insect ID Lab at the University of Florida where it will be identified for a small fee.

RULE NUMBER 11. Be consistent. If IPM is going to work, you must follow through. Once you change your mind and spray an incompatible chemical because you are uneasy, or do not follow your consultant's advice, the pest can get ahead of you and cause damage. You will be starting back at the beginning if you decide to once again follow an IPM Program. Also remember that your scout needs to scout weekly.

RULE NUMBER 12. Make a map of the area. The scout can mark on the map where problems are found so that you and they can follow up on that area. The map shows you areas where you need to treat so that you can get by with spot spraying. You can determine if the outbreak is gone, spreading, or moving around by using a map.

RULE NUMBER 13. Set a threshold level for pest damage. Be realistic. If you don't think your crop can tolerate any damage, it is probably best to use other methods of pest control. A threshold is the level at which the pest damage will not significantly devalue your crop. This is possible. It is also possible to add value to your crop by including tags stating that the consumers may see insects present because you are using methods that use less toxic pesticides on the crop and that may include a slight presence of beneficials.

These rules mainly target communication between the grower and the consultant. The line of trust and communication between the partners is essential for a successful IPM program. The rewards of successfully using an IPM program can be varied and satisfying, so one should consider these rules to help ensure their success.