

GROWERTALKS

Columns

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Coverage = Kill

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“Coverage equals kill” is a great phrase to live by if you’re a pesticide applicator, but not so great for the targeted insects, mites or plant pathogens. Successfully controlling pests and diseases involves more than simply applying an effective product. I have a few thoughts about obtaining better results with spray applications.

The objective of any spray application is to provide a uniform distribution and deposition of active ingredient throughout the target area, which will effectively control the intended insect or plant pathogen. Even the best products available will be less effective when they’re not applied properly, good coverage is not obtained and if the application equipment isn’t being maintained. Below are several guidelines that will help growers achieve optimal efficacy from these applications:

- **Apply pesticides that are effective at controlling the desired pest(s).** It’s best to properly identify the insect, mite or plant pathogen before making applications to control these problems. Sometimes we get lucky, but in other cases, applying the wrong product can be both ineffective and costly.
- **Make applications to interrupt the pest life stages that are most vulnerable.** Many products do not control all life stages. This is particularly true with miticides, but other insecticides, as well as fungicides, may only control a specific life stage.
- **Use the right equipment for the job.** It’s important to use spray equipment as intended and to not use equipment that’s not built for the type of applications you intend to make. Read the owner’s manual and follow all the manufacturer’s recommendations.
- **Ensure consistent, thorough and uniform coverage.** Deliver pesticides to plants in such a manner that the spray solution is applied to both the upper and lower leaf surfaces uniformly. Leaves and stems that receive inadequate coverage aren’t protected as well as where adequate coverage is delivered. I find it extremely beneficial to use bi-directional spray patterns, or spraying the plants from opposing sides or two different angles. This really improves the coverage obtained and greatly influences the amount of control

achieved. Thus, coverage equals kill.

- **Properly deliver pesticides to improve coverage and the effectiveness of these products.** Growers should know in advance how much volume needs to be applied to any given area before the applications are made. They should also know the output (gallons per minute [gpm]), the application pressure (pounds per square inch [psi]) and the droplet sizes (microns) of the spray equipment being used. This information is helpful for growers to determine how much spray solution needs to be applied and the approximate time needed to make the applications.

- **Clean the sprayer.** This is one of the most important aspects of sprayer maintenance. Clean the equipment between every use by running lots of water, warm water, very diluted soapy water or sprayer cleaning solutions through the pump, hoses and spray orifices. Properly cleaned spray equipment will also reduce the likelihood of contamination and remove the potential for phytotoxicity (crop damage) from previous applications.

- **Set up a maintenance schedule.** Growers should take steps to ensure that the equipment they use for their chemical applications are properly maintained. Routine maintenance schedules should be set up to inspect the equipment and to replace any worn parts. Be sure to inspect all hoses, filters, seals and tank lining for leaks, fractures, cracks and clogs. The pressure and spray pattern should also be routinely observed. Well-maintained and properly functioning equipment in combination with good application techniques will go a long way to maximizing the effectiveness of spray applications.

Failure to keep this equipment in good shape will result in the improper coverage of the chemicals being applied, inadequate pest control and the potential to cause injury to crops. Properly maintained spray equipment not only improves the efficacy of the applications and decreases the total costs associated with a pest management program, but will greatly extend the life of this equipment.

I'll leave you with one last guideline, which I'm sure you've heard before, but it's a very important one: Always read product labels and use fungicides, insecticides and miticides as directed. **GT**

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