

Guidelines For Successful Spraying

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It is human nature to put off jobs we don't enjoy. If you were to ask a group of rosarians what was their least favorite aspect of rose growing, you will find that most agree, spraying roses is a job that no one looks forward to. So why do we spray our roses? We spray to prevent diseases that affect the health of our roses, and to eliminate pests that damage our blooms or decrease the vigor of our plants. Regardless of the type of spray equipment used to apply pesticides, whether a pump-up (compression), atomist, battery or gas engine sprayer, the steps for successfully applying pesticides is the same. The guidelines below are intended to make spraying, though not your favorite chore, more efficient and therefore more effective.

IDENTIFYING THE PEST Our first step to successful spraying is to identify the pest we are targeting. A pest can be an insect or fungus. Identification of the pest is important so the proper pesticide can be selected for control. Selecting the right pesticide for the intended use is an important step in using pesticides properly. Knowledge about pesticides use starts with an understanding of the intended uses of the specific pesticides that will be used. Pesticides are a broad group of chemicals, which include, among others, insecticides, miticides and fungicides. For example, Orthene is an insecticide and should be used to kill insects, while Floramite and Avid are miticides used to kill spider mites. Fungicides, like Funginex or Cleary's 3336, are good at preventing fungus (like blackspot), but aren't useful as insecticides or miticides. The advice given in Dr. Jim Small's "In the Garden" column of the Wind Chimes guides you in identifying pests and recommends pesticides for their control that have been proven successful in Central Florida rose gardens.

PURCHASING THE PRODUCT Jim Small's Recommended Spray Formulations Table, (which is included in each issue of Wind Chimes), suggests products that are packaged in smaller quantities for general homeowner use (i.e. Funginex) in addition to products packaged for agricultural or nursery production (i.e., Cleary's), which typically come packaged in larger amounts. Both types (homeowner or agricultural) will do a good job. If you have a large garden you may find the commercial size pesticides are more cost effective than the standard homeowner size. Select pesticides based on your ability to use the product within two (2) years (the average length of most chemical's shelf life). When purchasing a pesticide write the date of purchase on the container with a permanent marker.

STORING CHEMICALS Most pesticides have a limited shelf life based on specified storage conditions, with temperature being one of the factors. Typically gardeners store their pesticides in garages or sheds, which are not climate controlled. The heat in these areas may cause the pesticides to break down and lose their effectiveness. We all agree that spraying is "No Fun" ... But it would be even "less fun" spending your time spraying with chemicals that were no longer effective. To keep your pesticides fresh, it is

recommended that you store them in a cool, safe and secure dark place. Garages and garden sheds are not the best choices. Never place pesticides in a bottle or container originally intended for food that could attract children and possibly cause a fatal accident. Keep your chemicals in their original containers. They should be locked up or stored on a high shelf, out of the reach of children. I place my pesticide containers inside a five-gallon bucket with a secure lid and store on the top shelf of an air-conditioned closet.

THE LABEL It is very important that you read the label entirely. Do not pass go and read only the application rates. Also do not, I repeat do not, rely on dilution rates provided by verbal recommendations or any other source other than the label. I have read numerous misprints on dilution rates. Additionally manufacturers may modify the dilution rates and without reading the label you will not know the current formulation. After reading the label write the dilution rate on the container with a permanent marker.

In addition to dilution rates, the label typically lists targeted pests, minor safety data and first aid. Most commercial pesticides have accompanying Manufacturer Safety Data Sheet (MSDS) (which are not attached to the product) that provides more detailed data. Generally the toxicity levels of the product through inhalation, dermal and ingestion are listed on the MSDS. You can request a MSDS from the supplier when purchasing a commercial type product.

SAFETY So you can understand safety, I provide you with this analogy. Science has proven that cigarette smoking causes cancer. Further it can generally be stated that smoking one cigarette will not cause cancer. But with repeated smoking the chance of cancer is increased. Therefore it is a cumulative effect.

Spraying your roses without the proper protective equipment is the same. It is likely that one spraying without protective equipment may not be detrimental to your health. But repeated unprotected spraying over a rosarian's life is harmful to your health. Garden chemicals are toxic - they are intended to kill. Protect yourself.

The base line minimum of recommended safety equipment is safety glasses, a respirator, chemical resistant gloves, long sleeve shirt, long pants, water resistant shoes and a wide brimmed hat. These make a difference. You may wonder ... Why a hat? Many pesticides can be absorbed through the scalp, and the wide brim will also help protect the face and eyes from spray drift. The glasses are extremely important in handling concentrated chemicals to protect your eyes in case of a splash. One of the methods of toxicology is dermal (absorption through the skin). Therefore, I highly recommend the use of chemical resistant gloves while measuring and mixing chemicals as your hands may come in contact with the concentrated pesticides.

MIXING Estimate the quantity of material you will need to spray your roses. You should have a pretty good idea of how many gallons it takes to spray all your bushes.

Always use measuring spoons/cups you have purchased specifically for pesticide mixing. The measuring spoons/cups are kept with your chemicals and stored in a safe and secure location. Always measure chemicals and use only the recommended amount. More is not better and can be harmful.

A spray adjuvant and water pH buffer is recommended. Most chemicals are more effective in acidic water. Many rosarians use dish soap and vinegar as their surfactant and pH buffer. However, I highly recommend Indicate 5, which I have used for many years. It is inexpensive and well worth the minimal expense. Indicate 5 contains a red indicator dye that turns the water pink at pH 5.0 which is the ideal acidity for most pesticides. It is an excellent surfactant and reduces the quantity of spray material you need to apply. Surfactants break the surface tension and allow the spray solution to cover the leaf surface in lieu of forming larger droplets on the leaf surface and running off. It helps the pesticide stick to the leaves.

Fill your sprayer with half the amount of water you will require. Measure in the correct quantity of your surfactant and buffer. Liquid pesticides are then added to the tank. Pesticides that are wettable powders or dry flowables are measured into a separate container (like a 2 gallon pail). Add enough water to the powders in the pail to be able to stir, mix and agitate the materials into suspension. The pail mixed pesticides are then added to the spray tank and any remaining water is added to fill the tank to the correct level of dilution.

SPRAYING About 10 to 12 hours before you plan to spray, water your roses deeply. A well-watered plant has turgid leaves that are less likely to suffer spray burn. I use to be an advocate of spraying early in the morning at the crack of dawn. I did this for years because it is what I had been taught ... “To prevent spray burn you had to spray before temperatures reached 80 degrees”. For the last few years I have been spraying when it is convenient - even in the heat of the day. As long as the roses are well watered before spraying, and a few hours later (if spraying in the heat), the time of day does not seem to matter. It is easier on the rosarian to spray during the coolest part of the day, but not mandatory to prevent spray burn. If you can't spray first thing in the morning then spray when you can. It is best to spray when the wind is calm. This prevents the spray from getting all over you instead of the plants. If you have to spray when there is some wind, stand upwind so the spray material is carried in the direction of the bush. Be aware of neighbors and wildlife - do not spray when other people, pets, or animals are present.

TECHNIQUE Spray the undersides of the leaves first. Most disease and insects start here. (Aphids are another matter - they are usually on the lush, nitrogen-rich top growth. And when spraying for Powdery Mildew get good top growth coverage as mildew spores usually settle on the tops of the bush.) Move around the bush to thoroughly cover the undersides of the leaves. You will notice that the overspray will come up through the bush and fall back onto the upper surfaces of the leaves. After thoroughly spraying the entire underside of the plant, the top surface is then lightly sprayed. Most

recommendations are to wet the leaf surface until runoff. All that is really required is to apply sufficient material to create a sheen on the leaf surface. This can generally be accomplished with a quick pass over the top of the plant. (This is where Indicate 5 really pays off as it spreads out the materials over the top surface of the leaf.) If you see pooling of spray material at the tips of the leaves you have applied too much spray. You can gently knock off the extra by tapping the canes, as this buildup of spray, if left on the leaf, can cause burn.

CLEAN-UP In the event that you have spray material remaining in your tank after you have finished spraying, dispose of it in the grass (and next time you will know to mix less!!). You do not want to pour this down the sink or put additional spray on your bushes. You should then clean the spray tank by rinsing at least three times with clean water. Then partially fill the tank, pressurize and run clean water through the sprayer's hose, wand and nozzle. You may find over time that a chemical residue will form on the inside of your tank. This residue can be removed by using non-foaming ammonia in addition to water to rinse out your tank. The final rinse should be with water alone. Store your sprayer in a dry location out of the direct sun. Your respirator and safety glasses should also be washed with warm soapy water, set out to dry, and then stored until the next use. Wash your spray clothes by themselves in hot water. Take a shower and wash your hair.

By following these simple steps, and the pesticides recommended in the Wind Chimes, your spraying will be more effective and you will be well on your way to enjoying beautiful pest free roses.

If you have any questions about this article, please feel free to e-mail me at pawlrose@cfl.rr.com.