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DRIFT Dodging

The pesticide programs coordinator for Purdue University details important safety factors to consider before treating your nursery crops with sprayed chemicals.

Being mindful of spray drift when applying chemicals to nursery crops is as much about being a good neighbor as it is about the efficacy and safe handling of the chemicals. Awareness of weather conditions and your surroundings can help avoid unnecessary problems.

"When we look at spray drift, it's about understanding private property rights. There is no, 'I was here first, and they came later,' because the laws are pretty clear — specifically with pesticide labels, which tell us, 'Thou shall not drift.' It's trying to focus on that fact that you have the right to apply the material to your property and anyone around you has the right not to have that material on [his or her] property," says Dr. Fred Whitford, coordinator of Purdue Pesticide Programs of the Purdue Cooperative Extension Service, West Lafayette, IN. "That's the first piece — an appreciation for your neighbors."

Chemicals and communication. Some growers voluntarily will contact neighbors to explain what they are doing and what they want to accomplish with the chemicals, according to Whitford.

Many times when growers reach out to people in the area, neighbors will merely ask to be notified when they will be spraying, but "that is the first [step] for those folks who really want to be proactive," says Whitford.

"The reason you want to do this is you want people to have trust in you as the grower. And if you do make a mistake, they will understand that you're not just some loose cannon out there," he adds.

Should a pesticide drifting accident occur, it's a good idea to be proactive and discuss the situation with the people who are calling to complain, says Whitford, who adds, "It is always easier to deal with the person who is alleged to [have been affected by] spray drift than to deal with government officials coming in on a complaint that someone has filed."

If growers make promises to people, then they should deliver on those promises, says Whitford, because the point is to be building good relations with neighbors. This is especially important if a grower has ever had a complaint lodged against him or her — either a formal complaint filed with the state's department of agriculture, or a phone call where someone was very irritated.

"With that drift comes bad [public relations]. Sometimes you make the local news. If it's had enough, you will make the state news. People who drift sometimes will get a fine or a suspended license. Sometimes other companies will use that against you to gain sales," says Whitford.

Furthermore, growers need to make sure their employees are well-aware of who the complainants are, what the problem was, and that they avoid spraying where there is potential for drift beyond the intended area.

by BILL GRABAREK

Tips to help minimize pesticide spray drift

What is pesticide spray drift?

Pesticide spray drift is the movement of pesticides away from the target area. Whether you do your own spraying or have a custom applicator do it for you, it's important to pay close attention to drift and to understand the serious problems it can cause.

Pesticide spray drift is expensive, dangerous and illegal. It can result in increased insurance premiums, wasted product, increased production costs, claims, costly legal fees, fines from government inspectors and the loss of "goodwill" among your neighbors. The single most important step a grower can take to avoid pesticide drift is to make sure all ground and aerial applicators are skilled, careful and fully trained.

What environmental conditions contribute to drift?

Environmental conditions are one of the factors contributing to pesticide spray drift. Wind speed and direction and the distance to neighboring crops or other sensitive areas can cause drift conditions. High wind speeds can carry pesticide particles out of the target area, while high temperature and low relative humidity decrease particle size and increase drift potential.

What are sensitive off-target areas?

Sensitive off-target areas are areas outside of the field where you do not want to spray. These may include neighboring crops, homes, schools, day care centers, livestock feeding and watering sites, areas with grazing animals, surface water, roads or walkways, nurseries, greenhouses, areas prone to runoff and/or areas planted with food crops. Sensitive off-target areas should always be separated from spray areas by a buffer.

When is it too windy to spray?

Spraying when it is too windy or when the wind is blowing toward a sensitive off-target area can cause serious problems. Unfortunately, there is no "magic bullet" that tells a person when it is too windy to spray. This is where having a skilled, well-trained applicator and monitoring conditions come into play. Be sure to check the wind speed and direction to ensure they are within the recommendations on the pesticide label.

Note: It's important that wind direction always be checked, even at very low wind speeds. And a buffer should always be left between the spray application and sensitive off-target areas to allow for some drift downwind into the buffer.

How does spray droplet size affect drift?

Droplets need to be small enough to cover the area, but not too small that the drift potential increases. When given a choice, always choose larger drops within the range that will give complete control as specified on the pesticide label. You can avoid droplets that are too small by choosing appropriate nozzle types and/or orifice (opening) size; by adding recommended adjuvants to increase viscosity; by running your sprayer at the lowest recommended pressure; and by avoiding high temperature conditions that can cause droplets to evaporate in midair, thus becoming smaller in the process,

What is the proper sprayer height?

It is important that the height of your sprayer is adjusted properly. The greater the distance between your spray nozzles and target foliage, the greater the opportunity for air movement to carry droplets away. Wind speeds are higher with increasing height above the ground, so any increase in height causes an even greater increase in drift distance. In some cases, the pesticide label may give recommended heights. Otherwise, spray as close as possible to reduce drift, but far enough away to still get proper coverage.

Why keep written records?

Be sure to keep accurate, written records so you remember exactly what was done the last time you or your applicator sprayed, or in case you are ever accused of pesticide drift. Your records should include what state, federal and/or local laws require. In addition, here are some items that are a good idea to include that may or may not be required by law: the date (of the pesticide spray); accurate start and end times; weather conditions, including temperature, humidity, wind speed and direction; materials and amounts applied (including adjuvants); and target pests. Also, be sure to keep maintenance records (including the dates of calibration, and nozzle and tip replacement) on all spray and weather monitoring equipment that is used.

Reminder: Minimizing spray drift should be a team effort between the manager, customer and the skilled applicator in the field. Good communication and ongoing training are critical elements in effectively minimizing drift.

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"People are often forgiven the first time, but the second time, they are not," Whitford says.

The same goes for a grower who hires a commercial firm to do the spraying. These workers also need to know about past complaints because, although they are responsible for any chemical spray drift, "that just makes another irritated neighbor that you have to live with," Whitford says.

"The other things that can be done are more mechanical, depending on the equipment — if you are using a boom sprayer, an air-blast sprayer or even a backpack sprayer. One is to add adjuvants, which thicken up the liquid so it's not as fine a mist. You can lower [the spray] pressure. You can get closer to the target," says Whitford. "The key here is all of that can work, but if the wind is blowing toward people, that is when the difficulty arises. When that wind is blowing toward a person's property or sensitive area ... that's where you have to use all your skills to try to work around that."

Definitely document. After growers have decided on the appropriate time to spray, made adjustments to the equipment and discussed the situation with their neighbors — all to avoid chemical spray drift — a crucial step is documentation.

"There are people who are more than happy to accuse you of drifting, which in some cases you did and some cases you didn't. So you always want to make sure you have proper documentation," Whitford says.

Each state generally has different requirements of what it expects to see in the documentation, according to Whitford. What he would like to see documented is wind direction and wind speed. Many states do not require this information, he says.

"If you are accused of drifting and the wind was not blowing toward that direction, [then you are safe]. But if the wind was blowing toward them, then that is just one more sign that you shouldn't have been spraying. So it can work for you and against you. But if you are being proactive, it will work for you if you are being falsely accused," says Whitford.

"The other part is wind speed. In this particular case, we are asking people not to guess. You can buy [inexpensive] wind meters that give you some sense of how

strong the wind is when you are spraying," he adds.

For each one of the chemical products growers use, there are labels that direct them on how to use it. Most of them will look at mixing and loading — how much material and how much water to mix — and then go out and spray. That is an important piece, Whitford says, but they need to understand what the label says when it comes to wind direction, wind speed, humidity and temperature.


Fred Whitford

"Because if you violate any one of those conditions on the label, that is more evidence that you did drift. The label is the law. If you violate the label, you violate the law. That's why it's important to know which one of your products [has] specific requirements."

All part of the operation. There's nothing unusual about controlling chemical spray drift, according to Whitford. It is just one more aspect of running a safe nursery business.

"Managing drift is no different than managing the safety of any other part of the operation, whether you're driving a truck, digging up trees or having a line of people potting plants," Whitford says.

"And just like you do all the other pieces of your operation, it is a matter of letting your employees know what your expectations are so they don't get confused between production and being unsafe," he says.

If an employee is out in the field and concerned about spraying, Whitford says he hopes companies stress to their employees the importance of calling a supervisor to express this concern.

"Employees have got to know that it is okay to call and say that, because of weather conditions or because of people nearby, it just isn't conducive to spraying.

"Most of the people we hire are hard-working and dedicated, and [they] will give 110 percent. And if they are given an assignment to spray a group of trees or flowers, they will accomplish it. We want [supervisors] to say, 'We want you to get all this done, but only if [the conditions are conducive for spraying]; " says Whitford.

"Ultimately, reducing pesticide drift has very little to do with the pesticides or equipment," Whitford says. "It's about people making the right decisions."

Bill Grabarek is managing editor of AMERICAN NURSERYMAN.