

# Spray Drift Management

Spray drift, which occurs anytime liquid sprays are applied, is undesirable for economic, environmental and safety reasons.

Although complete elimination of drift is impossible, applicators can reduce problems if chemicals are applied with the proper equipment under favorable weather conditions. Efficient applicators don't spend money for pesticides to watch them drift away from target areas.

Today's chemicals require more precise application, and unsatisfactory pest control could result if a significant portion of the chemical is lost in drift. Also re-spraying the same field may be necessary. You may even find yourself in court if spray drift damages sensitive crops in a neighbor's field.

The environmental effects of spray drift are equally costly and unacceptable. By reducing drift to a minimum, you can reduce potential for pollution of streams, lakes and other water supplies. Regardless of how accurately an application is made, drift is always possible, but that possibility may be minimized by selecting the right equipment and using sound application techniques.

**Your judgement can mean the difference** between an efficient, economical application or one that results in drift, damaging non-target crops and creating environmental pollution. Definition of spray varies but generally means movement of a pesticide through air, during or after application, to a site other than the intended site of application. The affected area is usually limited to the close proximity where pesticides are applied.

Usually small amounts of drift are harmless, and the pesticide disappears into the upper layers of the atmosphere. However, under certain conditions, off-target movement may affect areas distant from the application site. Problems occur when this movement affects a sensitive crop or another person's property.

Sometimes pesticides may leave the application area in the form of vapor, a significant concern only if the pesticide is highly volatile and the atmospheric conditions become suitable for rapid vaporization of the pesticide.

Drift is influenced by nozzle type and size, spray height, spray pressure, characteristics of chemical formulation, weather conditions, equipment and application techniques and operator skill and care. Under a given spray situation, any one of the factors may be the most critical in reducing drift hazards.

**The applicator determines the critical factor** and takes precautions against it. By exercising good judgment regarding equipment and weather, applicators can minimize drift potential in nearly every case.

Spray droplet size by far most affects drift. Spray droplet diameters are measured in microns. One micron is equal to 1/25,000 inch. For reference, the thickness of a human hair or a sheet of paper is roughly 75 microns. Droplet size at which drift potential becomes insignificant depends on wind speeds—it is in the range of 150 to 200 microns for wind speeds less than 10 mph. Small lightweight droplets that can drift long distances should be avoided.

Small droplets are unnecessary when applying fertilizers and systemic herbicides. Small droplets are desirable with insecticides and fungicides for better penetration into the canopy and better coverage of the small target organism. Applicators are responsible for attaining balance between drift reduction provided by large droplets and good coverage provided by small droplets. Spray droplet size should be no finer than necessary to do an effective job. Recommended droplet sizes for fungicides, insecticides and herbicides are 150-250, 200-300 and 250-400 microns, respectively.

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## WHERE ARE THEY NOW?

### Budd Larson Now Enjoys Watching Someone Else Mow Grass, Shovel Snow

There's one thing that Clarence (Budd) Larson really enjoys about living in his retirement townhouse on Big Lake, about 35 miles northwest of the Twin Cities: watching someone else cut the grass and shovel the snow.

Engaged in the turf industry for nearly 30 years, Budd worked for the Minneapolis Park Department at Columbia Golf Course before operating Minnesota Toro's "red wagon" from 1976-1982. A member of the Minnesota Golf Course Superintendents' Association since 1961, he served on the Board of Directors in 1966.

One of his most enjoyable projects was the rebuilding of Columbia Golf Course in 1973.

Following retirement in 1975, Budd still kept busy in golf course work. In fact he helped build the nine-hole course at Crosslake while living about seven miles south on Horseshoe Lake.

In addition, he and his wife, Helen, were in the cast of Brainerd's "Geritol Frolics," a group of senior citizens who put on sell-out stage productions that also took them to other parts of the country.

Much of his retirement life revolves around traveling to the West Coast in the summer and fall as well as playing cards, shooting pool and chairing the Monticello Senior Center, located only a few miles from his townhome.

"I enjoy that and I can come and go as I please," said Budd, "but I do miss work, my friends in the industry and performing in the Geritol Frolics."

"I still keep in touch with Maynard Erickson (another retired superintendent) and it's always fun to see other old friends."

Budd and Helen can be contacted at 261 Shoreview Estates, Big Lake, MN 55309.

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## Strategies to Reduce Drift

Conscientious, experienced operators rarely get into serious trouble with drift damage because they take steps to avoid it. Here are 10 management strategies to reduce drift:

1. Use nozzles that produce coarser droplets when applying pesticides on targets that do not require small, uniformly distributed droplets (e.g., systemic herbicides).
2. Keep the boom closer to the spray target.
3. Keep spray volume up, and use nozzles with larger orifices.
4. Keep spray pressure up, and make sure pressure gauges are accurate.
5. Use spray additives and thickeners if necessary.
6. Follow label recommendations to avoid drift with highly volatile pesticides.
7. Avoid spraying on extremely hot and dry days, especially if sensitive vegetation is nearby.
8. Do not spray when conditions are favorable for an atmospheric inversion.
9. Do not spray when wind speeds are higher than 5 miles per hour.
10. Avoid spraying near sensitive crops that are downwind. Leave a buffer strip of 50 to 100 feet, and spray the strip later when the wind shifts.

Reducing spray drift not only improves application efficiency, but also reduces the risk to safety and health-related problems caused by drift.

**Because it is impossible to eliminate drift altogether,** always wear protective clothing when applying pesticides. A respirator is a must, especially if your tractor does not have a cab.

If you have any doubts about a spraying job that might result in drift, wait until you no longer have that element of doubt. Your goal should be to eliminate off-target movement of pesticides, no matter how small it may be.

—Turf Management



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