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 problems if chemicals are applied with the proper equipment under favorable economic, environmental and safety reasons.

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.

(Continued on Page 30)