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CONTROLLING PESTICIDE DRIFT

Drift occurs in two ways--particle or vapor. Particle drift occurs when small spray droplets travel long distances during periods of high wind and blow droplets from the targeted site. To avoid this, use larger spray droplets with low pressure, and apply herbicides only when wind speed is low. Vapor drift occurs when products volatilize or evaporate and move off the application site. The volatility of some products increases as temperatures rise into the upper 80s and 90s. The product label will provide information on when it's not safe to apply the product based on certain temperatures. The highest potential for drift is when it's hot and dry.

The most significant factor in controlling drift is wind speed and direction. When wind speed is doubled there is a 700% increase in drift when measurements are taken 90 feet downwind. Measure the wind speed and direction before, during and after the application. Always follow label information, but in general, wind speeds of 3 to 7 mph are preferable. Never spray when wind speeds are more than 10 mph. If wind speed or direction changes during an application, immediately adjust the buffer size or location, or stop the application. The Gage County Extension Website at gage.unl.edu has a connection to the weather service weather planner. The information is quite accurate for wind speed, wind direction and relative humidity predictions for the next 72 hours.

Sprayer boom height is the second most important factor in controlling drift. Increasing to boom height from 18 inches to 36 inches increased drift by 350% when measured 90 feet downwind. Boom height issues are one of the most common notations of sprayer error noted in Nebraska Department of Agriculture sprayer applicator monitoring observations. This is also the source of many homeowner and acreage owner spray drift issues. A hand wand waved in the air can be just as damaging as an agricultural sprayer.

Distance downwind is the third most important factor identified in a comprehensive Mississippi State University study of spray drift. If the distance from the sprayed area to the border or property line is doubled the amount of drift decreases five-fold. Buffer strips, field borders, fence rows and alternate cropping plans can all help to avoid drift issues near sensitive areas.

The nozzle directly affects the size of the spray droplet. The pesticide label may require use of specific nozzles that will produce a coarse- or medium-sized droplet. Coarse droplets resist drift, resulting in a lower drift potential. Inspect and calibrate spray equipment and check each nozzle for blockage or wear. Make sure the output is within 5% of the manufacturer's rating for the nozzle. Clean or replace the nozzle, if necessary to achieve the desired output.

Applying pesticides during a temperature inversion can result in damaging, long distance drift. Inversions occur when warm air, which is light, rises upward into the atmosphere and cool air, which is heavy, settles near the ground. Typically, temperature inversions start at dusk and break up with the sunrise because of vertical air mixing.

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