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## Herbicide applicator's drift reduction checklist

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# Herbicide applicator's drift reduction checklist

## **Abstract**

The last few weeks have brought an increase in calls concerning injury from herbicide drift, especially from burndown applications involving 2,4-D and glyphosate. The corn postemergence season is now in full swing and we anticipate that calls concerning injury resulting from herbicide drift will continue. It is impossible to eliminate off-target movement from a herbicide application. However, the amount of drift and the resulting effects are manageable. Below is an applicator's guide to managing herbicide drift.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Weed Science

# INTEGRATED CROP MANAGEMENT

The image shows a person in a field, possibly a farmer or researcher, with large, stylized text overlaid. The text reads "INTEGRATED CROP MANAGEMENT". The background is a blurred image of a field with tall grasses and a person in the distance.

## **Herbicide applicator's drift reduction checklist**

The last few weeks have brought an increase in calls concerning injury from herbicide drift, especially from burndown applications involving 2,4-D and glyphosate. The corn postemergence season is now in full swing and we anticipate that calls concerning injury resulting from herbicide drift will continue.

It is impossible to eliminate off-target movement from a herbicide application. However, the amount of drift and the resulting effects are manageable. Below is an applicator's guide to managing herbicide drift.

### **Know the wind speed and direction at the application site**

Pay attention to wind speed and direction around building sites. Wind speed is highly variable from one location to another and during the day. A wind meter should be used on-location for each application. This information is required for commercial applicator records and highly recommended for all private applicators. A wind meter is a small, but important, investment in drift management.

There is no magic wind speed at which applications must cease. Each field and situation is different, depending on the sensitive areas nearby. Many labels provide information about maximum wind speed and some, such as Command 3ME, have mandatory setback restrictions.

### **Use nozzles that produce large spray droplets**

Droplet size is the major factor influencing herbicide drift. Small droplets take more time to fall to the ground and can thus drift farther. It is desirable to use a nozzle that produces large, uniform droplets. Switching from standard flat-fan nozzles (such as an XR11003) to turbulence-chamber or venturi nozzles increases droplet size and can greatly reduce the amount of drift. Examples of such nozzles are Turbo TeeJet and AI TeeJet nozzles (Spraying Systems Co.), Raindrop Ultra (Delavan), and the TurboDrop (Greenleaf Technologies).

Droplet size can have a negative effect on herbicide performance when coverage is reduced. The droplet size produced by these nozzles should have no effect on performance for systemic herbicides, including burndown applications involving growth regulators or glyphosate. Contact herbicides, such as Buctril, Cobra, and Reflex, require adequate target coverage for maximum effectiveness and may have required nozzle and pressure combinations that produce smaller droplets. Always consult the herbicide label for specific recommendations or restrictions on equipment selection.



*Above: Turbulance chamber nozzles, such as Turbo TeeJet, reduce drift, provide good coverage, and can be used with a wide range of herbicide products.*

*Below: Venturi-type nozzles produce larger spray droplets that are less likely to drift.*



## **Use lower application pressure and higher carrier volume**

Higher pressure produces smaller droplets. Keeping sprayer pressure as low as possible, but within nozzle specification, produces larger droplets from the same nozzle operated at a higher pressure. Reducing pressure requires recalibration and adjustments in sprayer speed and carrier volume (gallons per acre). Using higher carrier volumes also allows the use of larger nozzles, further reducing drift.

## **Use lower boom heights**

Decreasing the distance spray droplets travel to reach the target results in less off-target movement. Boom height depends on nozzle angle and spacing. For example, 110° nozzles at 20-inch spacing should be 15-18 inches above the target to produce a uniform application rate across the length of the boom.

## **Be aware of sensitive areas and communicate**

Scout the area to be treated ahead of time and note particularly sensitive areas. Be aware of nearby plants that are sensitive to the herbicide(s) being applied. For commercial applicators, ask the customer whether they are aware of special areas and note these on field maps and

any application records. Make sure the applicator is provided with this information. It is also advisable to determine whether neighboring areas are involved in organic production. Advance communication can assist in preventing costly problems ahead of time.

Please note that any spray drift is illegal, not just drift that causes injury. Chemical trespass issues are receiving increased attention. Managing spray drift is the responsibility of the pesticide applicator. However, minimizing spray drift is in everyone's best interest.

For more information on nozzle selection and drift reduction, please see [Drift management and nozzle selection resources](#) [1].

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[1] <http://www.weeds.iastate.edu/reference/spray/>

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