Herbicide Drift Management

Every year the Minnesota Department of Agriculture (MDA) receives numerous complaints concerning herbicide drift. The MDA, in cooperation with University of Minnesota Extension, has developed this cue card to minimize potential herbicide spray drift. To minimize drift during herbicide application, applicators should follow label requirements/recommendations for weather conditions and spray equipment, application procedures prior to and during herbicide application.

Apply Under Label Recommended Weather Conditions

1. **Wind speed and direction**: Do not apply herbicide when wind speed is less than 3 mph or greater than 10 mph. Avoid application if wind is blowing toward sensitive species regardless of the wind speed.

2. **Temperature inversions**: Do not spray during a temperature inversion. Conditions that indicate temperature inversion include: clear night, calm day (wind speed <3mph), dew or frost present on the ground, ground fog in low-lying areas, and smoke that moves horizontally rather than rising. Consulting inversion detection apps/websites (e.g. NDAWN Inversion app) can be helpful prior to herbicide applications however on-site assessment of air temperature inversions is still the responsibility of the applicator.

3. **Temperature and humidity**: Spray during appropriate weather conditions. High temperature and low humidity can increase the chances of drift by reducing the size of spray droplets becoming smaller and lighter, and traveling further.

4. **Survey area for sensitive crops**: Do not spray when wind is blowing towards sensitive crops. Prior to application, survey the area near fields to be treated for herbicide sensitive crops. Also check FieldWatch.com, a specialty crop registry, for sensitive crops in the area.

Apply Using Label Recommended Application Equipment/Instructions

1. **Nozzle selection**: Use nozzles that minimize particle drift. If possible, avoid nozzles that produce fine, very fine or fog droplets at the pressure you plan to use. However the label may require a specific droplet size and spray pattern. Select nozzles that meet those requirements and also provide the rate of application required by the label.

2. **Spray pressure**: Apply herbicide at the label and nozzle manufacturer's recommended pressure range. Higher application pressures create small droplets that are likely to drift.

3. **Spray boom height**: Operate spray boom at minimum height based on nozzle type and spacing since applying herbicides at a lower boom height can decrease the distance that droplets travel to reach the ground.

4. **Spray volume**: Spray herbicides using label recommended spray volume.

5. **Spray equipment ground speed**: Do not exceed spray equipment speed than the speed recommended on the label.

6. **Tank-mix partners**: Always use USEPA approved tank-mix partners with herbicide application. In addition to checking the label, this may involve checking a product webpage for recently developed herbicides as some tank-mix additives may increase the risk of off-target movement of the herbicide formulation.

Avoiding spray drift is the responsibility of the applicator. The MDA investigates pesticide drift complaints and will enforce requirements on the product label.

Additional resources

https://extension.umn.edu/herbicides/avoiding-herbicide-drift#wind-speed-and-direction-1040814

www.mda.state.mn.us/pesticide-fertilizer/pesticide-drift-complaint-process-and-timeline

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