

9.0 MANDATORY SPRAY DRIFT MANAGEMENT

9.1 MANDATORY SPRAY DRIFT MITIGATIONS

9.1.1 For Aerial and Ground Boom Applications:

- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- Select nozzle and pressure that deliver medium or coarser spray droplets as indicated in nozzle manufacturer's catalogues and in accordance with American Society of Agricultural & Biological Engineers standards 572.1 and 641 (ASABE S572 and S641).
- During application, the Sustained Wind Speed, as defined by the National Weather Service (standard averaging period of 2 minutes) must register between 3 and 15 miles per hour.
- Wind speed must be measured at the release height or higher, in an area free from obstructions such as trees, buildings, and farm equipment.
- **DO NOT** apply during temperature inversions.

9.1.2 For Aerial Applications:

- When applying to crops via aerial application equipment, the spray boom must be mounted on the aircraft to minimize drift caused by wing tip or rotor blade vortices.
- Wind speed and direction must be measured on location using a windsock, an anemometer (including systems to measure wind speed or velocity on an aircraft), or an aircraft smoke system.
- When the wind speed is between 11 to 15 miles per hour, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- When the wind speed is between 11 to 15 miles per hour, applicators must use a minimum of 3/4 swath displacement upwind at the downwind edge of the field. Otherwise, applicators must use a minimum of 1/2 swath displacement upwind at the downwind edge of the field.
- **DO NOT** release spray at a height greater than 10 ft above the crop canopy unless a greater application height is required for pilot safety.

9.1.3 For Ground Boom Application:

- Spray at the appropriate boom height based on nozzle selection and nozzle spacing, but **DO NOT** exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions.
- Wind speed and direction must be measured on location using a windsock or anemometer (including systems to measure wind speed or velocity using application equipment).

9.2 Mandatory Spray Drift Buffers

9.2.1 For aerial and ground applications, maintain a downwind buffer between the last spray row and the protection area as follows:

Application Method	Droplet Size Distribution (DSD)	Minimum Buffer Distance
Aerial	medium	50 ft
Ground	medium to coarser	10 ft

Protection areas include all areas with the following exceptions which can be included in the buffer footage, provided that people are not present within the application exclusion zone during the application, and they will not be contacted by the pesticide, either directly or through drift (see 40 CFR 170.405(a) and 40 CFR 170.505(a)):

- Agricultural fields, including untreated portions of the treated field.
- Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated area.
- Buildings and their perimeters, silos, or other man-made structures with walls and/or roof.
- Areas maintained as a mitigation measure for runoff/erosion or drift control, such as vegetative filter strips (VFS), field borders, hedgerows, Conservation Reserve Program lands (CRP), and other mitigation measures identified by EPA on the mitigation menu.¹
- Managed wetlands including constructed wetlands on the farm.
- On-farm contained irrigation water resources that are not connected to adjacent water bodies, including on-farm irrigation canals and ditches, water conveyances, managed irrigation/runoff retention basins, and tailwater collection ponds.

¹ Growers must ensure that pesticide use does not cause degradation of the CRP habitat.

9.2.2 Aerial Spray Drift Buffer Reduction Options:

- A 20% (i.e., 10-foot) reduction in the required wind-directional buffer distance can be made if the applicator selects a nozzle and pressure that deliver coarse or coarser droplets in accordance with ASABE S572.
- A 35% (i.e., 18-foot) reduction can be made if the applicator selects a nozzle and pressure that delivers coarse droplets and uses an oil emulsion drift reducing adjuvant that constitutes 2.5% of the volume of the finished spray tank mix.
- A reduction in the required wind-directional buffer distance can be made if a windbreak or shelterbelt (e.g., trees or riparian hedgerows) between the application site and non-managed area is present and meets the criteria listed in the **Windbreak-Shelterbelt Criteria** section of this label. The reduction is 50% (i.e., 25 feet) if the windbreak or shelterbelt meets the basic windbreak-shelterbelt criteria and is 75% (i.e., 38 feet) if the windbreak or shelterbelt meets the advanced windbreak-shelterbelt criteria.
- The percent reduction in wind-directional buffer distances may be added if you use one droplet size buffer reduction option (coarse or coarse with an oil emulsion drift reducing adjuvant that constitutes 2.5% of the volume of the finished spray tank mix) and one windbreak-shelterbelt option (basic or advanced). The maximum buffer reduction that can be achieved by a combination of buffer reduction options is 100% (i.e., no drift buffer).

9.2.3 Ground Boom Spray Drift Buffer Reduction Options:

Any of the following options can reduce the ground buffer distance to 0 feet:

- Use of an oil emulsion drift reducing adjuvant that constitutes 2.5% of the volume of the finished spray tank mix.
- Application is made using an over-the-top hooded sprayer, as a layby application, or is made below the crop canopy using drop nozzles.
- Use of a row-middle hooded sprayer.
- If a windbreak or shelterbelt (e.g., trees or riparian hedgerows) between the application site and non-managed area is present and meets the criteria listed in the **Windbreak-Shelterbelt Criteria** section of this label.

9.3 Windbreak-Shelterbelt Criteria

Both basic and advanced windbreaks or shelterbelts (e.g., trees or riparian hedgerows) between the application site and non-managed area must be present and meet the following criteria for 50% and 75% wind-directional buffer distance reductions, respectively:

- The windbreak or shelterbelt must be downwind between the pesticide application and the non-managed area.
- The windbreak or shelterbelt must run the full length of the treated area with no significant breaks in the vegetation.
- The windbreak or shelterbelt foliage must be sufficiently dense such that the non-managed area is not visible from the upwind side at the time of application.
- The windbreak or shelterbelt must be planted according to local/regional/federal conservation program standards; however, no state or federally listed noxious or invasive trees or shrubs should be planted.
- The windbreak or shelterbelt must be maintained such that their functionality is not compromised.
- For basic windbreaks (50% reduction)
 - The height of the trees in the windbreak or shelterbelt must be at the same height or above the release height of the application.
 - The windbreak must have a minimum of one row of trees and/or shrubs or a 4-foot-wide strip of non-woody vegetation.
 - A semi-permeable manmade structure, curtain, or netting that is raised prior to application can be used instead of a windbreak or shelterbelt. This structure must be downwind between the pesticide application and the nonmanaged area, cover the entire distance of field adjacent to non-managed area, and at the same height or higher as the release height of the application.
- For advanced windbreak-shelterbelt (75% reduction)
 - The height of the trees in the windbreak or shelterbelt must be at a height that is at least twice as high as the release height of the application.
 - The windbreak or shelterbelt must have a minimum of two or more rows of trees and/or shrubs with a mixture of vegetation types (e.g., trees, shrubs, herbs), or that have 8 or more feet of depth for herbaceous (nonwoody) vegetation.
 - A semi-permeable manmade structure, curtain, or netting that is raised prior to application can be used instead of a windbreak or shelterbelt. This structure must be downwind between the pesticide application and the nonmanaged area, cover the entire distance of field adjacent to non-managed area, and at a height that is at least twice as high as the release height of the application.

See **ADDITIONAL SPRAY DRIFT INFORMATION** section below for more details.