How to use the Drift Risk Advisor

Introduction

Spray applicators are faced with the challenge of avoiding spray drift while getting adequate crop coverage. Spray drift is defined as “the output from an agricultural crop sprayer that is deflected out of the target area,” typically caused by wind. Spray drift can be hazardous to sensitive plants and animals.

To aid applicators in identifying times of higher drift risk due to weather, the Oklahoma Mesonet has created a Drift Risk Advisor. This planning tool compares parameters for weather variable with an 84-hour forecast matched to each Mesonet site. The Drift Risk Advisor uses the National Weather Service 84-hour North American Mesoscale (NAM) forecast, updated every six hours, and the Mesonet Dispersion Model forecast.

The Drift Risk Advisor is a weather-based planning tool that provides drift risk guidance, it does not supersede conditions at the field at the time of application that may be different from the forecast. The final judgment of whether conditions are appropriate for a spray application are the responsibility of the applicator.

Drift Risk Advisor Weather Variables

Select “Upper” and “Lower Limits” for weather variables that are appropriate for the application material. Upper and/or Lower Limits can be entered for one, all or any combination of the Drift Risk weather variables. Variables included are:

- Air Temperature (Fahrenheit)
- Relative Humidity (percent)
- Average wind speed (miles per hour)
- One hour rainfall (inches per hour)
- Wind direction
- Dispersion conditions

Dispersion conditions are based on the Oklahoma Mesonet Dispersion Advisor. Dispersion conditions are reported as one of six levels of vapor dispersion. These six categories are: Very Poor (1), Poor (2), Moderately Poor (3), Moderately Good (4), Good (5), and Excellent (6).

Finding the Drift Risk Advisor

The Oklahoma Mesonet Drift Risk Advisor is located on the Mesonet website, www.mesonet.org, under the Agriculture tab at the top. From the main Agriculture page, select “Drift Risk Advisor” from the left menu under Agriculture Essentials.
Drift Risk Advisor Output Table
Forecast weather variable boxes are colored green when they fall within the weather parameter ranges entered. Weather variables with forecast values outside the entered ranges are colored red. Values for weather variables not included in the comparison are in gray and white boxes.

When forecast variables all fall within the entered weather parameter ranges a green colored “Yes” box is shown in the “Criteria Met?” column. A red “No” box means that not all of the forecasted weather variables were within the entered ranges. A “Yes” or “No” is not a yes or no to spray. It is strictly addressing if the forecast values fall within the variable parameter ranges entered.

Examples of Drift Caution Statements on Pesticide Labels

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Common name</th>
<th>Pesticide group</th>
<th>Drift caution statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banvel + 2,4-D</td>
<td>Banvel and 2,4-D</td>
<td>Hormone herbicide</td>
<td>Do not spray near sensitive plants if wind is gusty or in excess of 5 mph and moving in the direction of adjacent sensitive crops</td>
</tr>
<tr>
<td>Dimethoate 4E</td>
<td>Demethoate</td>
<td>Organophosphate insecticide</td>
<td>Apply only when the wind is less than or equal to 10 mph</td>
</tr>
<tr>
<td>Todon 22K</td>
<td>Picloram</td>
<td>Hormone herbicide</td>
<td>Drift potential is lowest between wind speeds of 2-10 mph. Application should not occur during an inversion because drift potential is high</td>
</tr>
<tr>
<td>Warrior</td>
<td>Lambda-cyhalothrin</td>
<td>Synthetic pyrethroid insecticide</td>
<td>Do not apply when wind velocity exceeds 15 mph.</td>
</tr>
</tbody>
</table>

Drift Risk Advisor

The Oklahoma Mesonet is a world-class network of environmental monitoring stations. The network was designed and implemented by scientists at the University of Oklahoma (OU) and at Oklahoma State University (OSU).

The Oklahoma Mesonet consists of 120 automated stations covering Oklahoma. There is at least one Mesonet station in each of Oklahoma’s 77 counties.

At each site, the environment is measured by a set of instruments located on or near a 10-meter-tall tower. The measurements are packaged into “observations” every 5 minutes, then the observations are transmitted to a central facility every 5 minutes, 24 hours per day year-round.

For help with this or other Mesonet products, please call 405-325-3231, or email us at operator@mesonet.org.