BACKGROUND

On October 17, 2017, the U.S. Environmental Protection Agency declared three dicamba herbicide products as Restricted Use Pesticides (RUP). These three product labels were specifically labeled for use on Xtend dicamba-tolerant (DT) soybeans because of special formulations that reduced their volatility potential. Due to widespread damage by dicamba on non-DT soybeans and other dicamba-sensitive plants in 2017, EPA reclassified the three product registrations as RUPs in order to provide additional safeguards for how the products were applied and what pre- and post-application activities were required of applicators. Also additional specific record-keeping requirements were placed on the labels. While most of the new label language is logical and understandable, the Nebraska Department of Agriculture (NDA) believes it would be helpful to provide additional guidance to applicators on some terms found in the three labels. It should be noted that the information listed below could also apply to any other dicamba herbicide labels that EPA might register in the future for use on DT crops.

LABEL TERMS

**Boom Height:** All RUP dicamba labels require boom heights at or below 24 inches above the top of the surface being treated. NDA recognizes most spray boom systems vary in height when fully extended due to equipment design, and advises applicators to make sure all sections of the spray boom are capable of being lowered to this distance above the crop canopy. NDA also advises applicators to consider applying hilly or terraced fields in manners that reduce or avoid the ends of spray booms bouncing up as the terrain changes.

**Equipment Rinse Water Management:** All pesticide labels provide specific language or guidance on how to properly manage equipment rinsates. Many labels direct the user to dispose of equipment rinse water “on-site,” or to dispose of chemical waste “in compliance with local, state or federal guidelines.” NDA advises applicators that disposal of remaining pesticide tank material “on-site” means in the field to which the application was made, not the permanent location where mixing and loading is done on a daily basis. NDA advises applicators that unapplied material returned to the mix/load site and equipment wash/rinse water generated over a loadout pad are considered waste pesticides. Collection of these wastes should be used at a future time as makeup water on the same crop or site of application allowed by the label. Applicators should note that Title 128, Nebraska Hazardous Waste Regulations, is the state regulation covering the proper disposal of pesticide waste that cannot be applied, according to label directions.

**Equipment Cleanout Frequency:** RUP dicamba labels require applicators to ensure that spray equipment is clean before using the product and after the product is applied. Cleaning equipment prior to loading with dicamba assures that ammonia salts, other pesticides and additives from previous loads do not negatively impact the performance of the dicamba or the crop being treated. The intent of the labels registered by EPA and NDA for 2018 only require spray systems be cleaned (following the
procedures found on the RUP dicamba labels) before using the herbicide after another type of spray mix, and immediately after using dicamba before switching tank mixes. This is to avoid contaminating the RUP dicamba spray mix with other chemicals that might affect the volatility of dicamba, and also to avoid carrying dicamba over to a sensitive crop in the next load or applications. NDA advises applicators that all transportation equipment hauling pre-blended dicamba loads to the field are also potential sources of contamination and should be treated the same as spray equipment when it comes to clean before changing product mixes.

**Sensitive Crops:** The RUP dicamba labels list a number of broadleaf crops that are sensitive to dicamba; however, not all sensitive crops are listed. NDA advises applicators that any dicamba-sensitive plant grown as a crop is considered a sensitive crop. Applicators are encouraged to consult the DriftWatch website for a listing of enrolled sensitive crops in their area. The website address is [https://ne.driftwatch.org/map](https://ne.driftwatch.org/map).

**Sunrise and Sunset:** Since visible sunrise and sunset can be obscured by clouds, trees or terrain, NDA advises applicators to consult with the National Oceanic and Atmospheric Administration (NOAA) Solar Calculator found at [www.esrl.noaa.gov/gmd/grad/solcalc](http://www.esrl.noaa.gov/gmd/grad/solcalc) to determine a precise and official source in determining local sunrise/sunset for purposes of label compliance. The intent of restricting spray applications during daylight hours is to avoid spraying during a possible air temperature inversion event.

**Volatility:** The current RUP dicamba labels do not address the aspect of product volatility which can result in vapor drift. Applicators must understand that high temperatures and low relative humidity increase the potential for any formulation of dicamba to volatilize into a gas form, which can then travel considerable distances. NDA advises applicators that dicamba volatility is a function of both air temperature and relative humidity. If air temperature remains steady but relative humidity decreases, volatility potential can increase. In the same regard, if relative humidity remains steady but air temperature increases, volatility can increase.

**Wind Blowing in the Direction of Sensitive Crops:** Wind blows from all directions; rarely exactly parallel to or perpendicular to field borders. Historically, applicators have been challenged to determine whether a wind blowing diagonally across a field is or is not blowing “in the direction of” a sensitive site or crop. NDA advises that even winds blowing slightly toward a sensitive crop or site can carry drift particles that will result in partial or significant amounts of residue carrying off the target site.

**Measuring Wind Speed, Wind Direction and Temperature:** The RUP dicamba labels specify wind speed, wind direction and air temperature must be measured at the start and finish of any application at boom height. NDA recognizes many applicators use technology that accesses nearby or regional weather stations for this purpose; however, the RUP dicamba labels require these readings must be made at boom height, which means an off-site weather station reading does not comply with this label provision. NDA cautions applicators from using hand-held devices that have a large deviation plus or minus the stated reading, since some cheaply made devices can vary 10 percent or more from an accurate reading. NDA cannot recommend one device over another, but does believe there are many options available that provide a high degree of reliability, when properly maintained. NDA advises that wind direction be recorded as the direction from which the wind is coming toward you, not the direction it is going toward. Wind directions are typically recorded as the degrees of a compass heading or as abbreviations such as SW or NE.