Enlist Duo: A new era herbicide label

Crops resistant to Group 4 herbicides (Enlist: 2,4-D; Roundup Ready Xtend: dicamba) have been deregulated by the USDA and are expected to be available for planting in 2016 (pending approval by foreign markets). Some acres of Enlist corn may be grown in 2015 where the grain can be prevented from mixing in the open market. The spread of glyphosate resistant weeds has created demand for these tools from the ag community; however, the potential for large increases in use of these older herbicides has sparked concern from certain environmental groups. In fact, the EPA has already been sued for their approval of Enlist Duo, a premix of glyphosate and 2,4-D labeled for use on crops containing the Enlist trait.

The rationale for the lawsuit is that increased use of 2,4-D will threaten endangered species. Herbicides vary in the risk they pose to plants in areas adjacent to treated fields. Group 4 herbicides are more active on plants at the concentrations associated with off-target movement than most other herbicides. The EPA anticipated a lawsuit and worked with Dow AgroSciences to develop a label that the EPA will be able to defend in court. This article will briefly describe the label restrictions intended to minimize off-target injury associated with applications of Enlist Duo. Minimizing the threat these new crops and their respective herbicides pose to endangered species is the rationale for some of the restrictions. Dicamba products registered for use on Roundup Ready Xtend soybean will likely have similar restrictions.

- **Limited registration** – Enlist Duo is approved for use only in Iowa, Illinois, Indiana, Ohio, South Dakota, and Wisconsin. Additional states will be added in the near future, including areas where Enlist cotton will be grown. The limited registration reduces the potential area where Enlist Duo might have an impact on off-target areas.

- **Wind speed** - The label specifies not to apply at wind speeds greater than 15 MPH. Many labels include statements regarding wind speed, but usually suggest avoiding spraying when winds exceed a certain level rather than prohibiting application.

- **Nozzle selection** – The label includes a chart that describes nozzles and spray pressure that are allowable for use with Enlist Duo. Nozzles from six manufacturers are included on the chart. Use of any nozzle not listed on the chart would be a label violation. This is a departure from how many labels deal with spray droplet size. Most labels simply recommend using nozzle/pressure combinations that produce a specific droplet size (e.g. medium, coarse, etc.). Apparently EPA limited the list to nozzles that Dow AgroSciences had data demonstrating limited formation of driftable droplets.

- **Sensitive areas** – A 30 ft downwind buffer from the edge of the field must be maintained. The consequence of this restriction is that if the wind is from the north, the 12 rows (assuming 30” rows) on the south side of the field cannot be sprayed with Enlist Duo at that time. This restriction is in place regardless of wind speed. These 12 rows could be sprayed at a different time when the wind is from the south. The label specifies areas that are exempt from the downwind buffer: 1) roads, paved or gravel surfaces, 2) agricultural fields (planted or prepared for planting), and 3) areas that are covered by the footprint of a building (any man-made structure with walls or roof). The logic for these exemptions is that it is unlikely an endangered plant species would be present in those areas, thus an application of Enlist Duo would not threaten their survival. An important consideration is whether the median (ditch) between a field and paved area will be considered part of the exemption. If not, this would be a major inconvenience in using Enlist Duo since most fields are bordered by a road. How this exemption will be interpreted by the
EPA and state regulatory agencies is unclear at this time.

- **Susceptible plants** – The label states not to apply Enlist Duo under circumstances where spray drift may occur to food, forage or other plantings that might be damaged from drift. I would hope all applicators follow this precaution regardless of the product being applied. The label also states that at the time of application the wind cannot be blowing toward adjacent commercially grown tomatoes and other fruiting vegetables, cucurbits, grapes and cotton. Unfortunately the definition of adjacent is unclear (e.g. if there is a tomato field one mile downwind of an Enlist field, is that a sufficient distance to allow application of Enlist Duo?).

There is no doubt that some of these restrictions will be inconvenient for persons using Enlist Duo. It is important to recognize that only 2,4-D products containing Colex D™ Technology may be applied on Enlist crops. At this time, Enlist Duo is the only 2,4-D formulation possessing the drift reducing properties of Colex D™. Thus the restrictions for using 2,4-D on Enlist crops cannot be bypassed by using some other formulation of 2,4-D.

Before condemning EPA, keep in mind that they are pretty much between a rock and a hard place in bringing these products forward. As mentioned earlier, a lawsuit has already been filed that will attempt to have registration of Enlist Duo repealed. EPA is trying to avoid a situation similar to that with Roundup Ready alfalfa. After USDA deregulated this trait a federal court concluded that USDA did not fully evaluate the environmental risks associated with the release of the trait, and RR alfalfa was withdrawn from the market temporarily. While some of the restrictions may not seem completely logical, keep in mind they are designed as a tool for the EPA to defend their decision to approve the product. Hopefully the ambiguity in some of the restrictions will be resolved before widespread adoption of the tools. Persons who view the restrictions too stringent should simply avoid using the product. While dicamba products intended for use on dicamba resistant soybean have not been approved at this time, I think it is safe to assume they will have similar types of restrictions.