


# MESSENGER-INQUIRER

 Cooperative  
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## Farm Update

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AGRICULTURE & NATURAL RESOURCES  
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### Post-Emergence Herbicide Application

Corn and soybean planting is still under way across the area but the earliest crops were planted in the last days of March and are growing fast in the warm weather and frequent rain. Many of those fields are reaching the phase when post-emergence herbicide application is required to prevent weeds from reducing yield potential of the crop. There are several considerations for herbicide application onto a growing crop to avoid reducing herbicide effectiveness or crop yield.

The first step is defining your herbicide program. Which products you will use, which additives are necessary to enhance their effectiveness, what is the proper mixing order to ensure all products work to their greatest potential and do not antagonize each other. Which nozzles and how many gallons of water are recommended. These answers are on the label of the products you have chosen. Take time to learn what is recommended for the products you're using. Make sure to educate the people who are in charge of mixing and loading the sprayer. They may complete the process a few hundred times during the course of a summer but making sure they get started correctly is the key to reducing costly mistakes.

# MESSENGER-INQUIRER

Crop growth stage is very important for both corn and soybeans. Restrictions are explained in detail on the label. Don't apply to crops too small or too large or severe yield loss may occur.

Application timing is critical in postemergence herbicide applications. The ideal weed size is 2-4 inches and a maximum of 6 inches for control. Spraying weeds or grasses larger than 6 inches will result in weeds taking longer to die, or appearing to die and then sucker out. In the case of waterhemp, most of the emergence you see through a soybean canopy in July or August will be from the stump of a large plant sprayed in May that survived. That's how herbicide resistance develops.

Required nozzles and water volume per acre are very important. Systemic herbicides such as glyphosate or mesotrione recommend coarse water droplets of 12-15 gallons per acre. Contact herbicides such as glufosinate require fine to medium droplets and a minimum of 15 gallons of water per acre. There is no doubt, glufosinate has become the primary herbicide for post-emergence weed control application in soybeans. Use the product according to the label and don't expect it to perform miracles. I've seen soybean fields in May with waterhemp so out of control my advice was tillage or paraquat and start over. Expecting glufosinate, 2,4-D, or dicamba to solve a problem like that is expecting resistance to increase and poor yields.

The contact herbicides, especially glufosinate thrive in hot, humid sunshine. Of course, there are days when the clouds are out and you will keep spraying, but we strongly encourage not starting before mid-morning and stopping by early evening. All herbicides work better in temperatures above 50F. This is not a problem for summertime applications but can be more challenging for those early spring burndowns.

# MESSENGER-INQUIRER

Drought conditions can be problematic as well. Weeds dealing with drought will metabolize herbicide more slowly, increasing their time to die and their possibility of recovery. Likewise, crops suffering from drought will metabolize the herbicide more slowly increasing their risk of injury. Most soil residual herbicides require rainfall to activate. An extended period between application and activation may allow grass and weeds to emerge.

Be aware of temperature inversions. This is where a layer of warm air is trapped between cooler air that is higher in the atmosphere, and dense, cooler air that is close to the surface of the earth because of less sunlight intensity. When an herbicide is applied during a temperature inversion, the warm air can trap herbicide droplets above the cool air, and lateral wind can transport the herbicide away from the targeted deposition site. These conditions are usually present before sunrise and after sunset.

Most everyone has been rained out spraying. Unless you are chased out of the field by a severe thunderstorm, the products you were using probably did their job, but with reduced efficacy. Ideally, 4-6 hours should pass between application and rain.

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