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# Dicamba damaged soybeans: What to know

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In the past month, several calls have come in to The University of Missouri Extension from growers in the area whose soybean fields are showing symptoms of dicamba damage. While we cannot always be sure where the dicamba came from or why the dicamba moved off-target, we can help assess the damage. Many of the questions we get are answered below.

**What does dicamba damage look like?** Once dicamba enters the soybean, it moves to the meristematic, or growing regions, of the plant. Therefore, symptoms of dicamba damage will be most obvious on the new growth. The most noticeable symptom will be cupped or puckered leaves with a shortened midvein that gives the leaf a "drawstring" effect. Once a leaf becomes cupped, it will remain damaged throughout the season. The stem and petioles of the plant may also twist. Under high exposure rates, callus formations may form on the stem while the hypocotyl will become swollen and brittle. If exposed to dicamba in the reproductive stage, soybeans pods can be malformed or aborted. Soybeans with dicamba damage will be stunted and shorter than plants in unaffected areas.

**What should I be looking for?** Symptoms of dicamba damage can take 10-14 days after exposure to show up in damaged fields. The first thing to look at is the new growth. Because it travels to the meristematic regions, the newest trifoliates will continue to be cupped if dicamba remains in the plant. Also, look at the highest node on the plant and determine if the apical meristem has been killed by checking for any new trifoliates or buds. In the vegetative stage, damage to the apical meristem will cause the soybean to put on new branches lower in the canopy. Look for pod damage in the reproductive stage. This will often be in the form of pods with the ends twisted or curled.

**How will this affect my yields?** Unfortunately, there is no way to know how much yield will be lost until the combines are in the field. Soybean yield will be most affected by the stage of the soybean at exposure and the rate of dicamba it was exposed to. Researchers have proven that soybeans exposed to dicamba in the vegetative growth stage have a greater ability to recover and yield similar to unaffected areas of the field than soybeans that are exposed to dicamba after flowering. This is because at an early growth stage, soybeans can put on new branches and leaves lower in the canopy to make up for some of the lost growth at the top of the plant. In the reproductive stage, the soybean is focused on putting on and filling pods, so any damage during this time directly affects its yield capabilities. Growing conditions for the rest of the season can also impact yield response. Research has shown that soybeans exposed to dicamba are more likely to suffer yield losses if they are drought-stressed after exposure. Although soybeans have an amazing ability to recover from damage or stress, yield loss from dicamba damage is likely.

**What now?** If you have soybeans that are showing dicamba damage, the most important step is communication with your neighbors. Most applicators carry pesticide applicator insurance that will help cover losses from off-target movement of an herbicide. In many instances, applicators are willing to file a claim with their insurance once they learn that they have caused damage to a neighbor's crop. A friendly conversation will not only help with neighbor relations, but it may help recover yield losses.

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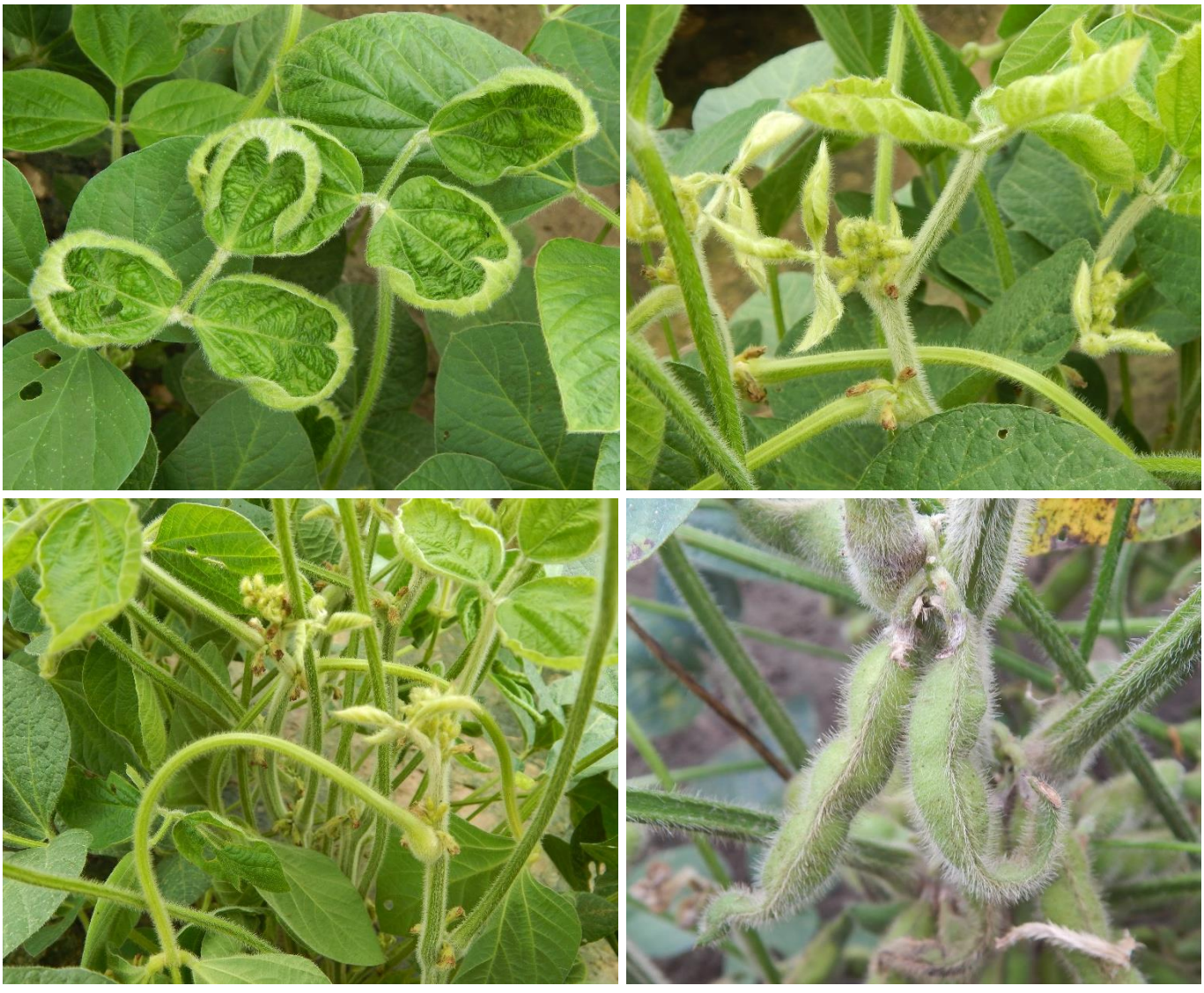

Clockwise from top left: (1) Soybean leaves cupped from dicamba damage. (2) Apical meristem damage as a result of dicamba. (3) Malformed pods due to dicamba exposure in the reproductive growth stage. (4) Stem and petiole twisting from dicamba.