

INJURY SYMPTOMS FROM SELECTED HERBICIDES



1. Corn injury



2. Wheat injury



3. Drift injury



4. Stunted corn



5. Imazaquin or chlorimuron carryover injury



6. Pruned lateral roots



7. Imazaquin injury to corn



8. "Golden Beans"



9. Chlorotic soybean leaf margins



10. Chlorotic crinkled soybean leaves



11. Red venation



12. Pigweed

INJURY SYMPTOMS FROM SELECTED HERBICIDES

PIGMENT INHIBITORS (1 to 3) include Command (clomazone), Amitrole, Sonar (fluridone), and Zorial (norflurazon). These herbicides inhibit the production of photosynthetic pigments in the plant. Pigment inhibitors are primarily soil active with intermediate to long soil persistence. Command may injure corn, small grains, forage legumes, and some ornamentals by air movement (particle and vapor drift), misapplication, or carryover. Injury symptoms include chlorosis and whitening of the plants, followed by necrosis of the bleached tissue. Corn is more likely to recover from Command injury than small grains, but plant death is possible.

1. **Corn injury** from clomazone carryover.
2. **Wheat injury** from clomazone carryover.
3. **Drift injury** to a sensitive ornamental from a preemergence application of clomazone.

MERISTEMATIC INHIBITORS (4 to 12) include both the imidazilinone and the sulfonylurea herbicides. Both of these families inhibit plant growth by preventing the synthesis of certain amino acids. These herbicides have both foliar and soil activity and can stop root and shoot growth, depending on the site of herbicide uptake (soil or foliar application).

The *imidazilinones* include Scepter (imazaquin), Pursuit (imazethapyr), and Arsenal (imazapyr). These herbicides have intermediate to long soil persistence. Plant injury symptoms can include stunting, interveinal chlorosis followed by necrosis, and inhibited root growth. Injury may often be expressed as a nutrient deficiency due to the lack of root development. Corn is more sensitive to Scepter, and sorghum is more sensitive to Pursuit. Crop injury can occur due to misapplication or carryover. Although soybean injury is not common with Scepter applications, it occurs more frequently on lighter textured, lower organic-matter soils, particularly where root invading organisms are also present (SCN, *Rhizoctonia* root and stem blight,

etc.) Soybeans may appear stunted with shortened internodes and may have chlorotic leaf margins similar to a phosphorus deficiency.

The *sulfonylurea* family includes chlorimuron, which is the active ingredient of Classic and a component of Preview and Lorox Plus. Other sulfonylureas are Glean and Telar (chlorsulfuron), Harmony and Pinnacle (DPX-M6316), Ally (metsulfuron), and Oust (sulfometuron). These herbicides have short to long soil persistence. Activity and persistence increase with increasing soil pH (especially above 6.8). Injury symptoms are similar to the imidazilinones, causing stunted plants, interveinal chlorosis, inhibited root growth, and purpling venation. Injury to corn from chlorimuron may occur due to misapplication or carryover. Soybean injury is not common, but can occasionally occur. Both corn and soybean injury may be very similar to the injury seen with the imidazilinones.

4. **Stunted corn** from imidazilinone or sulfonylurea carryover injury.
5. **Imazaquin or chlorimuron carryover injury** to corn.
6. **Pruned lateral roots** — imidazilinones and sulfonylurea.
7. **Imazaquin injury to corn** from a postemergence misapplication.
8. **"Golden Beans"** — imazaquin or chlorimuron, soil applied.
9. **Chlorotic soybean leaf margins** — imazaquin or chlorimuron.
10. **Chlorotic crinkled soybean leaves** — chlorimuron postemergence.
11. **Red venation** — sulfonylureas.
12. **Pigweed** — chlorosis to necrosis; slow plant death: imidazilinones and sulfonylureas.

Photo credits: William S. Curran, Asst. Agronomist and Mark M. Loux, Grad. Research Asst.; University of Illinois at Urbana-Champaign. **Subject matter:** William S. Curran, Asst. Agronomist, Marshal McGlamery, and Ellery L. Knake, Professors of Weed Science, Dept. of Agronomy, University of Illinois at Urbana-Champaign.