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Right Crop Stage for Herbicide Use

Alfalfa, Sugarbeets, Soybeans, and Fieldbeans

If you are using herbicides on alfalfa, sugarbeets, soybeans, or fieldbeans, information in this Guide will help you apply them at the proper time for best weed control with a minimum of crop injury.

Robert G. Wilson, Jr. Extension Weed Specialist
Alex Martin, Extension Weed Specialist

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Proper timing of postemergence herbicides is essential to achieve maximum weed control with minimum crop injury. As field crops grow and mature, their tolerance to herbicides changes. As a general rule, annual and biennial weeds are more susceptible to postemergence herbicides when they are in the seedling stage, becoming increasingly difficult to control as they mature. The grower is thus faced with the problem of when to apply herbicides to achieve the least crop injury and the most satisfactory weed control. Field crops differ in their growth stages and consequently so does the period when postemergence herbicides can be applied safely. Each crop must be considered separately to identify the correct crop growth stage for the application of each specific herbicide.

Herbicides recommended for use in alfalfa, sugarbeets, soybeans, and fieldbeans are discussed in this NebGuide.

Sugarbeets

Special attention must be paid when applying postemergence herbicides to sugarbeets as the sugarbeet plant can easily be injured if postemergence herbicides are not applied properly. Herbicides recommended for post-emergence application to sugarbeets are Dowpon, Poast, Betamix, Betanex, Eptam, Treflan and Herbicide 273.

Dowpon M, a postemergence herbicide used for annual grass control, should be applied between sugarbeet emergence and the six-leaf stage of growth (*Figure 1*). Poast can be applied to sugarbeets to control annual and perennial grasses. Sugarbeets are tolerant to Poast at all stages of growth.

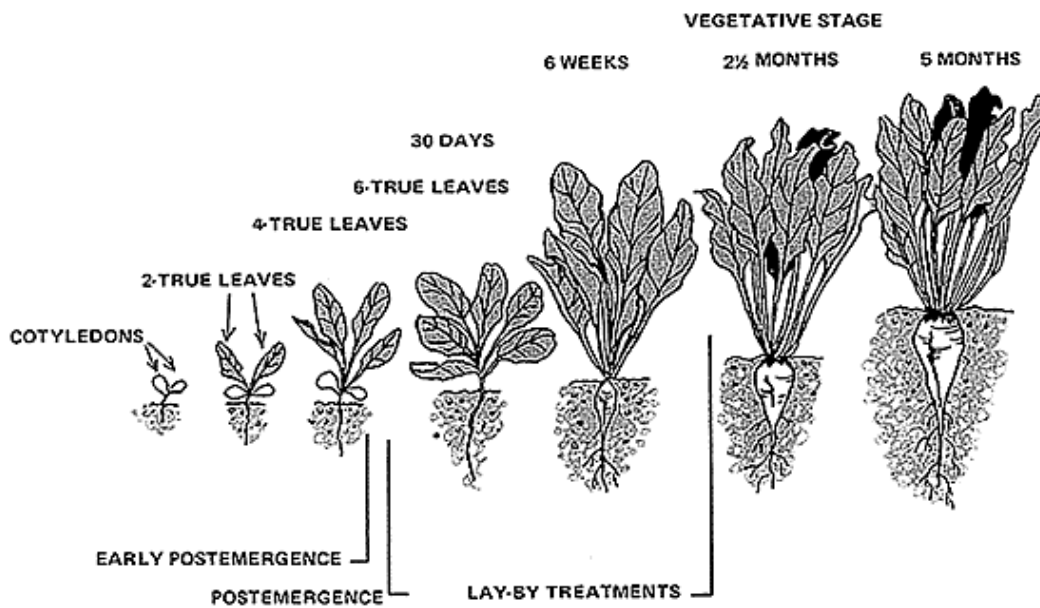


Figure 1. Stages of Sugarbeet Growth.

Betamix and Betanex are effective broadleaf weed killers but give very little grass control. Betamix and Betanex can be applied at low dosages to sugarbeets at any stage of growth. At higher rates of application sugarbeets should be past the two-true leaf stage.

If sugarbeets are under environmental stress or show signs of preplant or preemergence herbicide injury, delay applying postemergence herbicides until the sugarbeet has overcome the early injury. In some cases by the time the sugarbeet has recovered from early injury the weeds may be too large for effective control with postemergence herbicides.

Temperature influences the activity of Betamix. Betamix affects sugarbeets more if the temperatures are high (above 85°F), and affects them most when sprayed just as temperatures are changing from cool to hot. To reduce sugarbeet injury, apply Betamix in the afternoon or evening when temperatures are falling. Betamix is usually more effective in controlling kochia than Betanex.

Herbicide 273 can be applied to sugarbeets once they are in the 4 to 6 leaf stage of growth. Apply when air temperatures are above 60°F. Herbicide 273 effectively controls wild buckwheat and common sunflower.

Eptam or Treflan can be applied as a lay-by treatment after thinning and when the sugarbeet has reached the four-leaf stage of growth. Apply Eptam or Treflan after clean cultivation since it will not control weeds that have emerged. Incorporate Eptam or Treflan into the upper 2 inches of soil to avoid loss of the product through volatilization.

Alfalfa

Herbicides recommended for postemergence application in alfalfa are Butyrac or Butoxone (2,4-DB), Chem-Hoe, and Kerb. The herbicides Butyrac and Butoxone can be applied to alfalfa when the plant has 2 to 4 trifoliolate leaves (*Figure 2*). A trifoliolate leaf is made up of 3 leaflets attached to one petiole (branch).

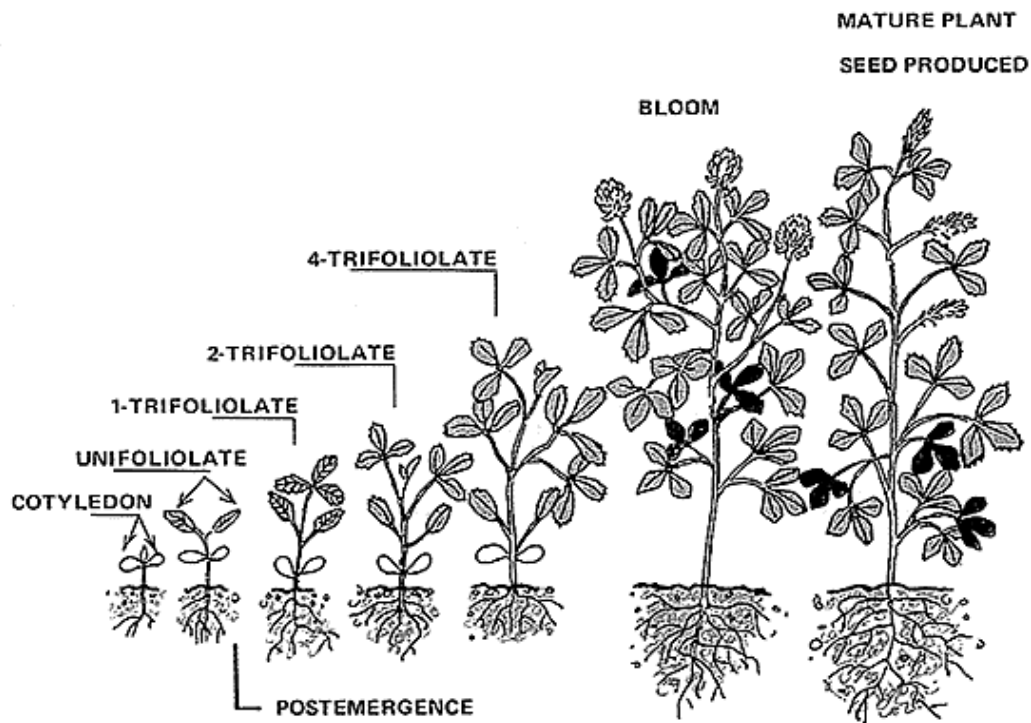


Figure 2. Stages of Alfalfa Growth.

Butyrac and Butoxone are effective in controlling broadleaf weeds but not grass weeds. For Butyrac and Butoxone to work properly alfalfa should not be under drought stress, and air temperatures at the time of spraying should not exceed 90°F or fall below 50°F.

Chem-Hoe and Kerb can be applied when alfalfa has the first trifoliolate leaf present. Chem-Hoe and Kerb are effective in controlling annual grass weeds but give very little broadleaf weed control. Best results are obtained when annual grasses are treated when they are 1 to 2 inches tall.

Chem-Hoe, Kerb, Butyrac, and Butoxone can injure alfalfa if applied before the alfalfa plant reaches the correct stage of growth.

Soybeans and Fieldbeans

There are several herbicides useful in Nebraska for postemergence weed control in soybeans including Basagran, Blazer, Hoelon, Rescue (Alanap + Butyrac/ Butoxone), Tackle and the newly developed Fusilade and Poast. Soybeans are tolerant of Basagran, Blazer and Tackle in all growth stages; however, most susceptible broadleaf weeds should be no taller than 4 inches. Weeds are usually in this size range when soybeans are in the unifoliolate to two trifoliolate leaf stage (*Figure 3*). A unifoliolate leaf is made up of a single leaflet attached to a petiole (branch). Crop limitations are 65 days before harvest for Basagran and 50 days for Blazer and Tackle.

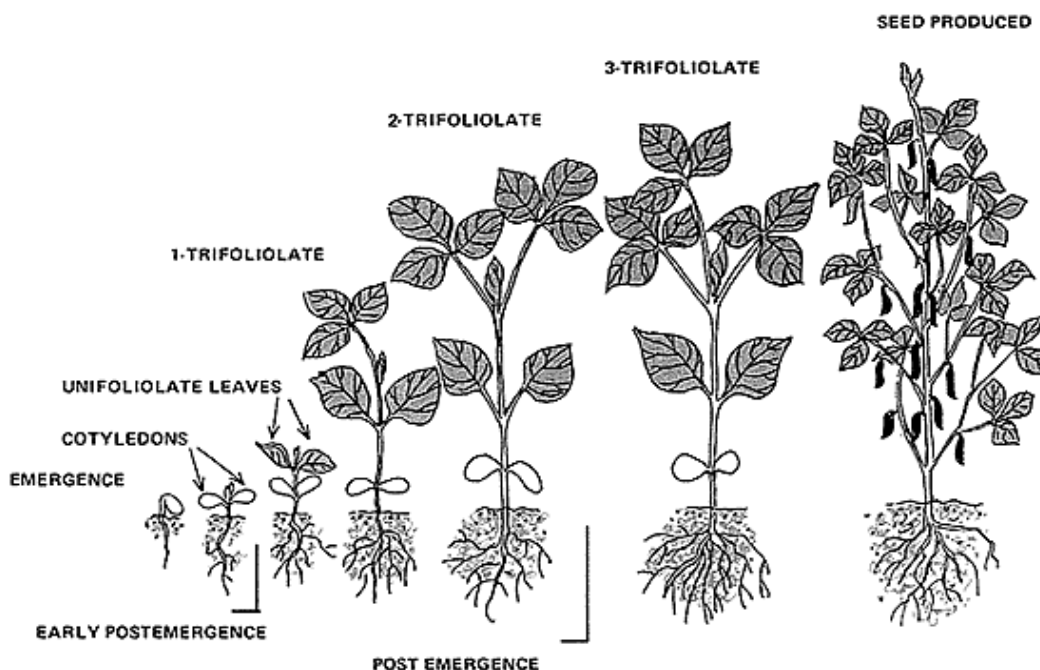


Figure 3. Stages of Soybean and Field Bean Growth.

Basagran can also be used for postemergence broadleaf weed control in fieldbeans. Fieldbeans must have the first trifoliolate leaf fully expanded before application of Basagran. If weeds are under drought stress, it may be necessary to irrigate prior to herbicide application to ensure that weeds are actively growing. Apply Basagran when weeds are small (1 to 2 inches) and actively growing. Basagran performance may be improved by adding oil concentrate to the spray solution, but under certain conditions this may increase fieldbean injury.

Hoelon is very effective for volunteer corn control in soybeans. Treat soybeans with Hoelon before the 6th trifoliolate leaf stage. For best results, treat when most of the corn is under 14 inches tall.

Rescue, a combination of Alanap + Butyrac/Butoxone, is truly a rescue treatment effective against cocklebur, sunflower, and giant ragweed 12 to 20 inches tall. Use Rescue from 10 days before and through the midbloom stage of soybeans.

Fusilade and Poast are labeled for postemergence grass control in soybeans. Labeling is also anticipated for fieldbeans, alfalfa, and several other broadleaf crops. These crops are tolerant in all growth stages; however, the limitation before soybean harvest is 70 days for Poast and 60 days for Fusilade. Crop oil concentrate should be added to the spray solution to improve the performance of both Poast and Fusilade.

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