

# Practicing Good Stewardship When Applying Herbicides for Pasture Weed Control

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Various methods and strategies can be used to combat weed problems in pasture fields. These include mechanical and cultural practices such as mowing or clipping fields, maintaining a good soil fertility program, grazing methods, and other management practices that promote the growth of desirable forage grasses which in turn compete against weeds. Herbicides can be the best alternative to effectively control several troublesome broadleaf weeds. However, it is important to understand the proper use of herbicides and practice good stewardship. Below are some important tips to consider when choosing and applying a herbicide product.

## Tip 1: Select the Appropriate Herbicide Product

When considering an herbicide it is important to choose the right product for the specific weed(s) to be controlled and for the appropriate location or site. Most pasture herbicide products selectively target broadleaf weeds, but certain products are better for control of specific weed species. Consult the product label and other resources such as university weed control guides [e.g. *Weed Management in Grass Pastures, Hayfields, and Other Farmstead Sites*, AGR-172 or *Broadleaf Weeds of Kentucky Pastures*, AGR-207] to determine if a herbicide will control the weeds of greatest concern. It is also important to determine if an herbicide product is approved for application on grazed pasture fields. Many herbicide products that are registered for use to control weeds in lawn or turf areas contain active ingredients which *are not approved by the EPA* for applications on pastures to be grazed by animals.

## Tip 2: Applying the Right Time of the Year

Herbicide products often work best on younger, actively growing weeds. Therefore, the size and growth stage of the weeds to be controlled is another important factor. As annual weeds grow larger and mature, the effectiveness of control is often reduced. Furthermore, herbicides will provide little benefit for long-term control of weeds that have begun to flower and produce new seed.

Many cool-season weeds such as buttercup, biennial thistles, and poison hemlock should be targeted for control in the early spring (March-April) or after they begin to emerge in the fall (October-November). Summer annual weeds such as common ragweed, spiny amaranth, and cocklebur should be treated with a herbicide in early summer (June) when these plants begin to emerge as seedlings. Whereas, the preferred time to treat many perennial broadleaf weeds such as curly dock, tall ironweed, and Canada thistle is in the late summer (August-early September). A mid-summer mowing followed by herbicide treatment of the regrowth works best for some perennial weeds such as tall ironweed. Late summer applications will often result in more herbicide movement into the root system of perennial plants.

Therefore, knowing the life cycle and reproductive characteristics of problem weeds is important in determining the right time of the year for herbicide treatment. In addition, applying synthetic auxin (i.e. plant growth regulator type) herbicides [e.g. the active ingredients 2,4-D, dicamba, triclopyr, and aminopyralid] during certain times of the year, particularly during the early and mid-summer months, has a higher potential for exposure of sensitive plants to off-target movement of spray particles.



## Tip 3: Spray Attention

Herbicides are chemical compounds that are designed and intended to kill undesirable plants. When applied appropriately broadleaf weeds can be selectively killed in grass pastures and the desirable forage grasses will survive. At times the success of a herbicide treatment can be dependent on the applicator. The applicator should be knowledgeable of the herbicide being used and the conditions whereby the application will be made. They need to be familiar with the proper use of the spray equipment to ensure adequate coverage on the weeds to be controlled. In addition, they should know how to best operate the sprayer to minimize the potential for off-target movement of spray particles.

## Tip 4: Minimize the Potential for Offsite Movement

When herbicides move off-target nearby sensitive vegetation can be severely damaged or killed. Some important guidelines should be followed by applicators to ensure good spray coverage of weeds and minimize off-target spray movement.

**Be aware of your surroundings** and know what your neighbor is growing. Look around and determine whether or not sensitive crops or plants such as tobacco, soybeans, grapes, vegetables, home gardens, or landscape trees are growing nearby, particularly if they are within a ½ mile of the proposed application area.

**Become familiar with the herbicide** you plan to use. In addition to the potential for physical particle drift, does the product contain active ingredients which can potentially convert into a gas or vaporize when temperatures are high and humidity is low. Herbicides containing 2,4-D are particularly at risk for volatility and different formulations of 2,4-D respond differently to temperature. For example, 2,4-D LV Ester formulations are more likely to volatilize at lower temperatures than a 2,4-D Amine formulated herbicide. Therefore, consult the label of any herbicide product to be applied to determine what steps are recommended by the manufacturer to minimize off-target spraying including recommended buffer distances or label requirements for setback distances to downwind sensitive plants.

**Be aware of wind speed and direction.** The wind speed should range between 3 and 10 mph for optimum performance. When winds are above 10 mph, spray patterns may be inconsistent and some herbicide labels prohibit applications. In general, avoid applications when wind speed exceeds 10 mph to reduce the potential for downwind spray particle movement. On the other hand, when the wind is still (less than 2 mph) a temperature inversion may exist which can permit fine spray particles or vapors to move long distances.

**Use the right nozzles and spray pressure.** Spray nozzles are designed to operate within a specified range of spray pressures to deliver the spray solution at various volumes and spray droplet sizes. The desired output for most pasture applications are nozzles that produce coarse

to ultra-coarse droplets (>400 microns). When fine and very fine droplets are produced they are likely to move herbicide several hundred feet away from the target area. For example, spray tips that produce fine and very fine spray droplets (150 microns or less in diameter) may travel long distances (600+ feet away) from the target in a 4 mph wind compared to less than 10 feet with medium to coarse spray droplets.

**Select the appropriate spray volume.** Another practice to produce larger droplets is to utilize spray tips designed for spray volumes of 15 or more gallons of water per treated acre. But avoid increasing spray pressure to achieve larger spray volumes, which in turn could result in finer droplets with some spray tips.

**Control sprayer boom height.** The spray boom should be kept as close to the target as possible, preferably no more than 24 inches above the canopy. Choosing spray nozzles with wider angles (e.g. 110-degree spray angle) will allow the boom to be placed lower to the vegetative canopy while maintaining the right spray pattern across the spray boom.

### **Tip 5: Reseeding Fields and Future Crop Uses**

Another question often asked after an herbicide has been applied is how long should you wait before inter-seeding new forage grasses or legumes into the treated pasture? This will often depend on the specific herbicide used. As a general rule of thumb, reseeding should not occur immediately after treatment with selective broadleaf herbicides including applications of 2,4-D. The waiting period can be several weeks (or months) after

treatment for some herbicide products. Thus, the herbicide label should be consulted for determining the minimum waiting period before reseeding grass or legume forages or other crops.

In some situations, it may be desirable to convert a field that has been treated with a pasture herbicide to agricultural cropland or other uses. However, certain crops are highly sensitive to herbicides that remain in the soil for extended periods of time. For example, aminopyralid-containing products (e.g. Chaparral, ForeFront, GrazonNext, and Milestone) can damage tobacco and other sensitive broadleaf crops even if planted into herbicide treated fields 2 to 3 years after an application. These products require a successful field bioassay before an alternative sensitive crop should be planted. Also, composted manure from animals that have been fed hay produced from fields treated with aminopyralid can cause injury to sensitive plants. Always consult the product label for specific restrictions and guidelines.

### **Summary**

Herbicides can be effective tools to manage problem weeds in pasture fields. However, good stewardship and management practices are required to ensure that the most benefit can be gained with an herbicide application. Stewardship must include proper spray applications to minimize the potential for off-site movement of herbicides that may cause damage to nearby sensitive crops and vegetation. Furthermore, reseeding and the future uses of a field should be considered before application of an herbicide.

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