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Tired of looking out across your annual ryegrass pastures and see them covered with henbit or your hay fields covered with a sea of yellow buttercups every spring? Regardless of whether it is annual ryegrass or small grain pasture, most cool season annual weeds reduce forage yield, palatability and quality. Despite of cooler temperatures from November to late March, there is a number of weeds that can grow and have an effect on winter forage production in both grasses and legumes. Winter annual weeds germinate from seed mostly in late summer through winter, reach flowering and seeding stage in late winter to spring, and die in late spring to early summer. Examples include annual grasses (ryegrass, little barley, annual bluegrass) and broadleaves (yellow buttercup, chickweed, henbit, purple deadnettle, wild garlic and Carolina geranium).

Winter weeds in pastures can be controlled by mechanical, cultural or chemical means. Determining which method to use depends on the types of weed (s) being controlled, the level of infestation and the type of forage being grown (legumes vs. grasses). Due to wet and cool environments in Mississippi, mechanical and cultural control become very difficult during the winter and can impact the stand of perennial warm-season grasses. Chemical control could be very efficient and economical when utilized appropriately.



Figure 1. Common winter weeds found in Mississippi forage systems: (a) little barley, (d) henbit, (c) yellow buttercup, (d) annual bluegrass, (e) dandelion, (f) thistle, and (g) plantain.

Mississippi's producers are very familiar with the annual broadleaf weeds such as buttercup, henbit and wild garlic. These weeds are very common in dormant perennial summer pastures (bermudagrass and bahiagrass) and in annual ryegrass. These weeds can be easily controlled with a timely application of 2,4-D. In most cases, an application of 2,4-D at 1 to 2 pints/acre in to 20 gallons of water is ideal. In most cases, 2,4-D ester at 2 to 2 pints/acre provides excellent control of annual buttercups and musk thistle. Application of 2,4-D ester should be done during a clear, warm, sunny period (3 days of day time highs of 60 °F is preferred), and by adding 0.5 to 1 quart of surfactant per 100 gallons of spray solution for improved control, especially when applied during cool weather. Other products such as Grazon P+D (2,4-D + picloram) at a rate of 1 to 8 pt/ac or Grazon Next (2,4-D + aminopyralid) at a rate of 1.5 to 2.6 pts/ac with a non-ionic surfactant can be used in broadleaf control. If legumes are present in the pasture, **DO NO APPLY** these products since they will control legumes. Lower rates can be used early in the season when weeds might be small and higher rates should be used with larger annual weeds. It is important to follow label recommendations as well as planting and graz-ing/haying restrictions.

Like some of winter annual pastures, perennial pastures or hayfields might need a dormant herbicide application. Un-

managed broadleaves (especially buttercup) and winter grasses such as ryegrass, little barley and annual bluegrass will reduce forage production and quality of the first hay cutting or first grazing period. Because most of these weeds might be still actively growing at the time of initial fertilizer application, they can utilize portion of the nitrogen and potassium intended for hay production. Some of these weeds can be controlled early in the season with an application of glyphosate at 1.5 to 2 pints/acre in 10 gallons of water. Post



(sethoxydim) can be used to control annual ryegrass (when not a desired species) and little barley with an application of 1 to 2.5 pints/acre in 20 gallons of water and adding 2 pints/ac of oil concentrate. Pastora (nicosulfuron + metsulfuron methyl) can be used early in the season to well-established bermudagrass before it breaks dormancy to control little barley, annual ryegrass and broadleaves at a rate 1.5 to 2.5 oz/acre with 0.25% v/v nonionic surfactant. If annual ryegrass is a desirable species, **DO NOT APPLY** these products. **DO NOT APPLY** Pastora to bahiagrass. Unlike in bermudagrass, there are no safe and effective herbicides to control of grass weeds in tall fescue.

It has been well-documented that adding clovers to annual grasses or perennial pastures can contribute to higher yields, higher quality and nitrogen return to the soil over time. Many producers are reluctant to spray their pastures due to concerns will losing their clover stands. Unfortunately due to the weed pressure that we observe in some winter pastures, a herbicide application might be recommended. Pursuit (imazethapyr) can be used in seedling or established alfalfa or clover to control certain broadleaves and grasses. Pursuit can be applied at a rate of 3 to 6 oz/acre with 0.25% nonionic surfactant or 1 qt/acre of crop oil concentrate. When using this product, seedling legumes should have a least 2 fully expanded trifoliate levels. Keep in mind that Pursuit will suppress growth of grasses, such as fescue, ryegrass, and small grains seeded with legumes. Byturac (2,4-DB) has been also used in legumes with lower risk of injury. It could be applied at a rate of 1 to 2 pints/acre with a crop oil.

Herbicide applications should be done when weeds are smaller and weather conditions are favorable. These will decrease the amount of herbicide needed and will ensure greater efficacy of the herbicide and better economic returns. For more details in planting, grazing restrictions and weeds controlled by different herbicides labeled in Mississippi, refer to the Mississippi Weed Control Guidelines in MSUCares.com.

The information provided in this newsletter is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination or endorsement is intended and no endorsement by Mississippi State University, Mississippi Agricultural & Forestry Experiment Station or Mississippi State University Extension Service is implied. Product names are included solely to aid readers in locating and identifying the herbicides suggested.

For upcoming forage related events visit: http://forages.pss.msstate.edu/events.html

December 5, 2014 — Fall Forage Field Day, Starkville, MS. January 11-14, 2015— American Forage & Grassland Council Annual Meeting, St. Louis, MO

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