

GRASSBUR/SANDBUR

Identification and Management in Pastures and Hayfields

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Grassbur (field sandbur, sandbur, grass bur, sticker weed, etc.) is a troublesome, nasty grass weed species that affects desirable grass forage quantity and quality. Although young plants are often utilized as a grazing forage, seed capsules can penetrate animal tissues, causing pain and sometimes infection. More importantly, it has a negative effect on hay quality and substantially reduces forage value. There are many different grassbur species in Texas, although one of the more common is field sandbur, *Cenchrus spinifex*. Regardless, most are easily recognized in the mature stage of growth when the pernicious seed heads become apparent (Fig. 1). What you may interpret as the seed is a seed “capsule” that usually contains one to three seeds (Fig. 2). This capsule provides a nice environment for the seed to soak up moisture from the soil and hold it until the seed has received the other stimulants (warm temperatures, light, etc.) necessary for germination. This is also what makes it more



Figure 2

survivable than some other grass species in sandy soils that are more prone to dry out. Typical germination will occur when soil temperature rises above 52 degrees Fahrenheit or drops back below 75 degrees Fahrenheit. We often think of the grassbur species as being warm-season annual plants. However, many of these are classified as perennials, which can survive from one year to the next. Although foliage may get “burned” off by freezing temperatures in the fall or winter, sometimes these plants may survive and come back from the roots the following spring. These plants might be more difficult to eradicate since they have already developed a substantial root system the previous year. Whenever you have a weak stand of annual or perennial grass forage, grassbur will take advantage of this space and flourish. Therefore, one of the best cultural control measures is to keep your forage grass stands dense and healthy with proper management.



Figure 1

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Figure 3

The most important consideration for control is recognition in the early stages of growth (Figs. 3 and 4). The leaves on young seedling plants are usually hairless, while the sheaths surrounding the stem may have hairs along the margins. The sheaths will generally become pubescent (with hairs) as the plant matures. A narrow-fringed membranous ligule is present with hairs on the fringe (Fig. 3). The stems are somewhat flattened and often purplish colored at the base. Tillers are produced on the plants early, which add to the competitiveness of this weed. These perennialized plants can be identified in the winter by cutting the crown of the plant open. The presence of green tissue when the foliage is dormant indicates the plant is a perennial (Fig. 5). When you are doubtful about seedling identification, you can dig up young plants and you will often find the bur attached to the seedling.

Whether perennials are present or not, the foundation of grassbur control is using a preemergence herbicide. In areas where only



Figure 4



Figure 5

annual grassbur is observed, indaziflam (Rezilon) at 0.039 to 0.065 pounds of active ingredient (ai) per acre (3 to 5 ounces of product/acre) or pendimethalin (Prowl H2O) at 2 to 4 pounds of ai per acre (2.1 to 4.2 quarts of product/acre) can be applied during forage dormancy and before spring grassbur germination, typically mid-February (South and Central Texas) to mid-March (North Texas). Excellent results can be obtained by indaziflam if it is properly incorporated by at least 0.25 inches to 0.5 inches of rainfall or irrigation within 3 weeks of application. Good results can be obtained from pendimethalin if it is properly incorporated by at least 0.5 inches to 0.75 inches of rainfall or irrigation within 7 days of application.

For the best control of annual grassbur, a split application program is recommended. To address summer and/or fall season germination, a second application of indaziflam at 0.039 pounds of ai per acre (3 ounces of product/acre) or pendimethalin at 2 pounds of ai per acre (2.1 quarts of product/acre) will be necessary during the mid-growing season following a haying or grazing event. It is important to note that the maximum annual application rate for indaziflam is 0.078 pounds of ai per acre (6 ounces of product/acre). For pendimethalin, it is 4 pounds of ai per acre (4.2 quarts of product/acre).

Table 1. Maximum application rates in pounds of active ingredient per acre (product amount) for bermudagrass pastures.

Application Type	Indaziflam (Rezilon)	Pendimethalin (Prowl H2O)	Nicosulfuron + metsulfuron-methyl (Pastora)	Glyphosate (Roundup WeatherMax)	Imazapic (Plateau or Impose)
Single	0.065 (5 oz)	4 (4.2 qt)	0.0525 + 0.0135 (1.5 oz)	0.39 (11 oz)	0.19 (12 oz)
Split	0.039 (3 oz)	2 (2.1 qt)	0.04375 + 0.01125 (1.25 oz)	0.39 (11 oz)	0.095 (6 oz)
Annually	0.078 (6 oz)	4 (4.2 qt)	0.07 + 0.018 (2.5 oz)	2.25 (64 oz)	0.19 (12 oz)

If germinated seedlings or perennialized plants are present, the approach is to use one of three products that are labeled for postemergence control, meaning the product must be sprayed onto an emerged grassbur plant. Nicosulfuron + metsulfuron-methyl (Pastora) is one such product that must be applied to small grassbur plants (1.5 inches tall or across) at rates of 1.0 to 1.5 ounces per acre. It is only labeled for use on bermudagrass, so applying it on any other type of pasture or hayfield is illegal and could cause severe injury. There are no grazing or haying restrictions associated with the use of Pastora.

Another postemergence treatment is glyphosate (Roundup WeatherMax, a 4.5-pound glyphosate acid product), which is labeled for use on bermudagrass hayfields immediately after the first hay cutting at a rate of 0.39 pounds of acid equivalent (ae) (11-ounce product) per acre. This application also will control many annual grasses other than grassbur. Some stunting of perennial forage grasses will occur if a broadcast application is made when plants are not dormant. Higher application rates may be used for hard-to-control weeds; however, higher rates will cause a stand reduction in the forage species. It is important to treat as soon as possible after the first hay cutting for two reasons. First, there will be less crop injury since there will be less bermudagrass leaf area to take up the herbicide. Second, the product must contact the grassbur plants while they are small; this is less likely to happen if the bermudagrass has regrown and is covering the grassbur. A maximum of 2.25 pounds of ae (2 quarts) per acre per year can be applied with no grazing restrictions.

The third postemergence product should be used with caution. The active ingredient, imazapic (Panoramic, Plateau, Impose), will stunt bermudagrass growth for a period of at least 30 days. Some varieties, such as Jiggs and World Feeder, are more prone to injury than others. It is labeled for use in most perennial grass species, including native rangeland. When used while haying, the same suggestions for glyphosate apply to imazapic regarding the timing of application. It is an excellent herbicide, with both preemergent and postemergent activity, and is only recommended where controlling grassbur is more important than forage growth. It is relatively inexpensive and has a wide weed control spectrum. There are no grazing restrictions, but a 7-day haying restriction applies when using imazapic.

Always refer to product labels for specific information on recommended use patterns and other details. Contact your county AgriLife Extension agent for current information on control. You must keep hay fields scouted in the fall for grassbur presence to identify those areas where you might apply a preemergence, preventative herbicide in late winter or early spring, as described above. In the spring and throughout the summer, you should again scout the fields for early detection of grassbur and get postemergence treatments applied in a timely manner. No matter what the case, if you have had grassbur in the past, it is likely you will have it for years to come. However, a consistent weed management program can significantly reduce the grassbur pressure over time. Again, proper forage management will be the first step in grassbur control.