

# Sandbur solutions

There are several species of sandbur (*Cenchrus* spp.) across the United States. Sandbur can cause economic losses to land and livestock owners by reducing forage quality and quantity. Sandbur seeds begin to germinate when soil temperatures reach approximately 52° F and continue to germinate throughout the growing season. Soil disturbance from equipment transportation, tillage and animal activity (digging, burrowing or rooting) may promote sandbur germination.

Sandbur is generally thought of as an annual species, but some *Cenchrus* species are classified as perennial or short-lived perennial. Vegetative regrowth in the spring occurs from the crown of old plants. These perennial varieties are becoming more prevalent and complicate control as preemergent herbicides do not impact them and they are still difficult to control with postemergent herbicides. Proper control of these persistent plants may take several seasons to accomplish.

Sandbur will produce an inflorescence that forms spiny burs when mature, hence their name. These burs decrease bermudagrass quality on grazed and hay production sites.

Managing sandbur requires a program approach. Knowledge of the pest, control practices, field scouting and much diligence is necessary to battle sandbur. A successful program uses integrated pest management (IPM) and combines cultural, biological and chemical measures. **Once sandbur is established, it takes several years to reclaim the pastures.** 





Winter William

## Suggested Sandbur Control Programs

Program	Application Type	Solution	Rate (per acre)	Application Notes
Good	Preemergent	Rezilon® herbicide	3-5 fl. oz.	Apply in late January through early February to established fields. <b>Will not</b> control perennial sandbur plants.
Good	Postemergent (newly emerged sandbur under 2 in. tall)	Pastora® herbicide	1-1.5 oz.	Apply to well-established bermudagrass fields with less than 2 inches of desirable forage present (e.g., early spring or soon after a hay harvest).
Good	Postemergent (over 2 in. tall and perennial sandbur)	Pastora® herbicide + Roundup® Technology (4 lb. formulation)	1-1.5 oz. + 8 <sup>1</sup> fl. oz.	Apply to well-established bermudagrass fields with less than 2 inches of desirable forage present (e.g., early spring or soon after a hay harvest).
Better	Preemergent and postemergent (new plants under 2 in. tall; will not control perennial sandbur plants)	Rezilon® herbicide and Pastora® herbicide	3 fl. oz. and 1-1.5 oz.	Apply Rezilon herbicide in late January through early February and again after midseason (June). Apply Pastora herbicide in late March or early April before forage growth impedes sandbur coverage.
Best	Preemergent and postemergent (new plants under 2 in. tall and perennial plants)	Rezilon <sup>®</sup> herbicide and Pastora <sup>®</sup> herbicide + Roundup <sup>®</sup> Technology (4 lb. formulation) with 10% to 20% UAN carrier	3 fl. oz. and 1-1.5 oz. + 8º fl. oz. applied with 10% UAN and 90% water carrier	Apply Rezilon herbicide in late January through early February and again after midseason (June) cutting with Pastora herbicide + Roundup Technology. <sup>2</sup>

<sup>1</sup>4 pound-per-gallon glyphosate formulation

<sup>2</sup> Apply sequential application soon after the hay crop is removed from the field and before much bermudagrass regrowth to avoid excessive crop stunting

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# Factors to consider

#### Start with a soil test

**One of the biggest factors when combating sandbur is having a strong and healthy crop.** Bermudagrass is a great forage and competitor if managed, but it requires adequate nutrients to remain healthy and competitive. Soil tests will determine macronutrient and micronutrient needs. Bermudagrass requires macronutrients in a ratio of 4:1:3, so each ton of hay will require 50 units of nitrogen (N), 14 units of phosphorus (P) and 42 units of potassium (K).

Phosphorus availability is also directly tied to soil pH, so maintaining an adequate soil pH is essential. **Soil tests consistently done from year to year will lead to competitive bermudagrass stands better suited to compete with sandbur.** If the soil test requires lime, P or K, these nutrients are best applied in the fall as they are very immobile in soil. Winter rains will aid in moving the nutrients into the root zone of bermudagrass.

### **Prescribed burns**

If the pasture has a severe sandbur issue, a prescribed burn may help remove unwanted forage and mature sandburs. Implement burns after the bermudagrass has gone dormant. Inform local county officials, burn associations and fire departments of your burn plan. **Removal of vegetation by burns causes soil temperatures to warm quicker in the spring and could result in earlier sandbur germination.** Be prepared to address this with an appropriate, timely herbicide application.

#### Unnecessary soil disturbance

Gophers, moles, armadillos and other burrowing/digging animals often break the protective barrier of the treatment, allowing new sandburs to germinate deeper in the soil and below the herbicide layer, emerge, and establish in fields. The same is true for unnecessary equipment traffic, tillage and soil disturbance practices. **It is important to limit soil disturbances when possible.** 

Although largely uncommon, mechanical soil disturbance practices, such as tillage to break up hard pans or soil aeration practices, can negatively impact sandbur control programs. If conducted after the application of a soil residual, preemergence herbicide, these activities break the protective barrier of the treatment. These soil disturbance activities can also stimulate sandbur germination deeper in the soil profile, often 2 to 3 inches deep. These deep-germinating plants are typically out of reach of soil residual, preemergence herbicides that function near the soil surface.



# Sandbur solution programs

A diligent sandbur control program consists of:

- + Adequate soil fertility
- + A timely, late-winter preemergent application of Rezilon® herbicide
- + Frequent field scouting for perennial plants and/or escapes
- + Postemergence application of Pastora® herbicide + Roundup® Technology (4-pound formulation) to control established or perennial plants
- + A sequential Rezilon herbicide application midseason, generally after the first cutting, to prevent late-season germination of sandbur

#### **Preemergent solution**

Rezilon herbicide is the foundation of a good sandbur control program. Rezilon herbicide may be used in bermudagrass, bahiagrass, or other warm season perennial pastures and hayfields. There are no grazing or haying restrictions for Rezilon herbicide applied at 3 fluid ounces per acre in a single application. **Rezilon herbicide should be applied and incorporated with rainfall or irrigation well before sandbur or other annual grasses begin to germinate.** 

Since sandbur may germinate throughout the growing season, Rezilon herbicide (3 fluid ounces per acre) should be applied twice during the growing season: in late January to mid-February and again in mid-June to early July immediately after a hay harvest. Applications should be made with flat fan or similar nozzles that allow for good, uniform spray distribution. Use a water carrier volume of at least 15 gallons per acre. Boomless nozzles and large FloodJet tips on wide spacings (e.g., 60 inches) **are not recommended** as they do not provide uniform spray distribution or soil coverage across the spray pattern.

#### Field scouting program

Scouting for emerging, established or perennial plants is key to a successful sandbur program. In late winter and early spring, scout fields for sandbur plants persisting over winter. This can be determined by digging up plants and inspecting the crowns for green, living stems or vegetation. If present, be prepared to make a postemergent herbicide application once sufficient vegetation exists to take up the spray, preferably while plants are still small. Postemergence control will be reduced as plants get larger.

In late spring and throughout summer, scout fields for sandbur plants that may have escaped preemergent herbicide applications and perennial plants that survived the winter (look for dead stems from the previous year's crowns mixed with green, actively growing stems). When possible, time a hay harvest prior to sandbur seed head emergence to avoid further seed production. To limit crop response and maximize herbicide spray contact with sandbur, once hay is removed from the field, apply a postemergent herbicide spray of Pastora herbicide + Roundup Technology.

It is also critical to understand the growth cycles of other secondary weed species and incorporate them into your field scouting program. For example, horseweed (also known as marestail), common broomweed and musk thistle are typically known as summer annual weeds. However, these plants usually germinate in the fall.

#### **Postemergent solution**

Control of emerged or perennial sandbur plants requires a postemergent herbicide. **Pastora® herbicide controls** sandbur as well as 25 other problem grasses in bermudagrass pastures including little barley, rescuegrass, crabgrass and ryegrass (non-ALS resistant), plus over 100 broadleaf weeds like henbit, chickweed, mustards and many more. Pastora herbicide use rates are 1-1.5 ounces per acre with a maximum of 2.5 ounces per acre per season. There are no haying or grazing restrictions with Pastora herbicide.

Pastora herbicide can be applied in early spring before desired forage reaches 2 inches. If existing vegetation inhibits the spray from directly contacting sandbur leaves, unacceptable control will result. Under these conditions, apply soon after the next hay harvest.

Use flat fan nozzles on 20-inch spacing for the best coverage of sandburs. Small flood tips (TK 2.5s-7.5s) on 20-to-40inch spacing can provide adequate coverage if water/fertilizer volumes are increased to a minimum of 20 gallons of solution per acre.

Pastora herbicide can be applied in water and/or liquid fertilizer carriers. When using a water carrier, adding 5%-10% liquid urea ammonium nitrate fertilizer enhances postemergence herbicide activity. If liquid fertilizer is used as the carrier, apply no more than 30 units of N per acre. Always refer to the label for addition of adjuvants.

Pastora herbicide can be used as a spot treatment by mixing 2.5 ounces in 100 gallons of water with an approved adjuvant.

## Targeting seedling sandburs



Apply Pastora herbicide (1-1.5 ounces per acre) when sandburs are less than 2 inches in height.

# Targeting large or perennial sandburs



Sandburs that are larger than 2 inches or perennial plants that are regrowing from old crowns require a tank mix of Pastora herbicide (1-1.5 ounces per acre) with Roundup<sup>®</sup> Technology (8 fluid ounces per acre of a 4 pound-per-gallon formulation). Several seasons may be required to control these perennial sandburs.

# For more information, contact your Envu representative or visit Rezilon.com.

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