

Natural Resources Conservation Service
Interim Conservation Practice Standard

**VEGETATIVE BARRIER
(Ac.)
CODE 734**

DEFINITION

Permanent strips of stiff, erect, dense perennial vegetation established along the general contour of slopes but crossing concentrated flow areas at convenient angles for farming, or where sheet and rill erosion is not a concern, vegetative barriers may be established across concentrated flow areas only to control ephemeral erosion.

PURPOSE

This practice may be applied as part of a conservation management system to support one or more of the following:

- Reduce soil loss by causing deposition of eroded sediment on hill slopes.
- Facilitate benching of sloping topography.
- Retard and reduce surface runoff by promoting detention and infiltration.
- Disperse concentrated flow and reduce ephemeral gully development.
- Entrap sediment-borne and soluble contaminants and facilitate their transformations.
- Provide wildlife habitat.

CONDITION WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown. This practice is most useful when used in conjunction with other conservation practices such as residue management and crop rotations.

Criteria For Contour Vegetative Barrier

Alignment. Obstructions should be removed to improve vegetation establishment and cultivation of crop strips. The vegetative barriers will be on or near the contour. Gradients will be 0.6 percent or less except where the vegetative barrier crosses a concentrated flow area. Gradients entering a concentrated flow area may be 1 percent for 200 feet or 1.5 percent for 100 feet in order to get better row alignment.

All tillage and planting operations will be parallel with the vegetative barrier.

Vegetative barrier crop spacing, vegetative barrier width, USLE p-value, and maximum slope length limits will be as shown in Table 1. Adjustments of 10 percent in spacing of vegetative barrier crop width will be allowed for machinery width and row spacing. Upward adjustments of the vegetative barrier width will be allowed for wildlife or maintenance. Crop strip width should be in multiples to accommodate planting and spraying width.

Table 1

Land Slope Percent	Maximum Crop Strip Width	Minimum Vegetative Barrier Width	USLE P-Value*	Maximum Slope Length Limits
0 - 2	150	3	.40	800
2.1 - 3	100	3	.30	350
3.1 - 5	75	3	.30	300
5.1 - 8	60	3	.40	200

*RUSLE P-Value is located in Section I, D3 of the FOTG.

Criteria for Vegetative Barrier Across Concentrated Flow Areas

Many cropland fields in Mississippi do not lend themselves to contour lines due to undulating soils. In this case, vegetative barriers may be installed across the concentrated flow areas. Vegetative barriers, when used to control ephemeral erosion, do not need to extend across the ridge top where water does not flow into the vegetative barrier.

The following criteria will be used when installing vegetative barriers for ephemeral gully control.

Vegetative barriers will be a minimum of 3 feet wide. Vegetative barriers may be wider than 3 feet to adjust for planter and/or sprayer width. Vegetative barrier length will vary depending on topography. At a minimum, each strip will extend far enough to provide 1.5 feet of elevation from the outer edge of the flow area to the end of the vegetative barrier.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Vegetative barrier crop spacing, vegetative barrier width, and p-value will be as shown in Table 2. Adjustments of 10 percent in spacing of vegetative barrier crop width will be allowed for machinery width and row spacing. Upward adjustments of the vegetative barrier width will be allowed for wildlife or maintenance. Crop strip width should be in multiples to accommodate planting and sprayer width.

Table 2

Land Slope Percent	Maximum Crop Strip Width	Minimum Vegetative Barrier Width	USLE P-Value*
0-2	150	3	1
2.1-3	100	3	1
3.1-5	75	3	1
5.1-8	60	3	1

*RUSLE P-Value is located in Section I, D3 of the FOTG.

Criteria for Using Vegetative Barriers in Conjunction with Field Stripcropping (Code 586), Filter Strips (Code 393), Riparian Buffer Zones (Code 391), and Grassed Waterways (Code 412)

1. Field strip cropping. Field strips are similar to vegetative barriers except they are wider, have less stringent contour alignment, and require sediment berms to be periodically removed and redistributed on the land. Vegetative barriers established just upslope or in the upper 3 feet of the field strip where they cross concentrated flow areas could reduce the failure of field strips caused by concentrated flow.

2. Filter strips. Filter strips are areas of vegetation located along field borders or above conservation practices such as terraces or diversions.

Vegetative barriers incorporated into the upslope portion of filter strips will increase filter strip longevity by promoting sediment deposition above the filter strip.

3. Riparian buffer zones. Riparian buffer zones are similar to filter strips but include woody vegetation as well as grasses. Vegetative barriers could again be used on the upslope edge of the grass vegetation zones.

4. Grassed waterways. Waterways are designed to remove water from a field under controlled conditions. In many cases, waterways are difficult to stabilize. Vegetative barriers may help stabilize waterways by planting a vegetative barrier at stated intervals in the waterway.

Criteria for Establishing Vegetative Barriers

Vegetative barriers will be planted to Alamo Switchgrass. The following planting and management specifications will be followed to establish Alamo Switchgrass as a vegetative barrier.

1. Seedbed preparation. Poor seedbed preparation is a major cause of stand failures in grass plantings. Therefore, seedbed preparation should be planned and initiated well ahead of planting.

No-till planting can be ideal provided the seed are placed at the optimum depth and the soil is firmed around the seed to obtain good seed-to-soil contact. When planting no-till, apply a good burndown herbicide two to three weeks before planting. Do not plant no-till into weeds!

Tilled seedbeds may also be used. Prior to planting, prepare a clean, firm seedbed by double disking and smooth with one harrowing. Cultipack before and after planting except on heavy prairie soils. On prairie soils cultipack only after planting. If the seedbed receives a rain before planting, disk and cultipack again before planting.

2. Planting. When planting with a drill, use the small seed attachment (clover box). Drill 20 pounds of pure live seed per acre at a depth of 1/4 to 1/2 inch. Do not plant deeper than 1/2 inch! When broadcast seeding, broadcast 30 pounds of pure live seed per acre and cultipack after planting. For information on pure live seed (PLS), refer to Grassland Technical Note 55.

3. Planting date. Plant from April 1 to June 15. Avoid planting after June 15. Best stands are obtained by early plantings.

4. Fertility. Before planting, apply phosphorus and potassium according to soil test recommendations or at the rate of 200 pounds of 0-24-24 per acre. Apply 1 ton of lime per acre on acid soils. Nitrogen should not be applied at planting. Apply 45 pounds of nitrogen per acre after the Alamo Switchgrass is six (6) inches tall. In some cases, phosphorus, potassium, and lime may not be needed if the crop field has been well limed and fertilized in the past.

5. Weed control. There are no labeled herbicides for establishment of Alamo Switchgrass. However, because Alamo Switchgrass is slow to establish, glyphosate (33 percent solution) applied with a wickbar will provide control of tall weeds such as Johnsongrass and goldenrod, etc., in the establishment year. Caution should

be taken not to apply the glyphosate to the Alamo Switchgrass. It should also be noted that the glyphosate is only for the establishment year.

When vegetative barriers in conjunction with other conservation practices are used to control erosion, the system planned will reduce erosion within the soil loss tolerance (T) or any other planned soil loss objective as determined by using current approved erosion prediction technology.

CONSIDERATIONS

Where vegetative barriers cross concentrated flow areas, sediment deposition will result in reduced slope and loose unconsolidated sediment which may significantly impede surface drainage. A drainage tile or slotted corrugated plastic tubing may be buried perpendicular to the vegetative barrier near the location where they cross concentrated flow areas. Use specifications for Subsurface Drainage Code 606.

If crop residue is to be grazed by livestock, livestock should be removed before the vegetative barrier is grazed below 15 inches. If the vegetative barrier is damaged by livestock crossings, these damaged areas can be repaired with transplants from other areas of the vegetative barrier.

When running water furrows on bedded cropland, end the water furrow at the upper edge of the vegetative barrier. Do not run the water furrow through the vegetative barrier!

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice will be prepared for each field or treatment unit according to the criteria and considerations described in this standard. Specifications will be recorded using approved specification sheets or job sheets (approved by the state agronomist) or narrative statements in the conservation plan.

OPERATION AND MAINTENANCE

The following actions will be carried out to insure that this practice functions as intended. These actions include normal activities in the application and use of the practice and repair and upkeep of the practice.

- After establishment, vegetative barriers will be fertilized as needed to maintain plant vigor. Periodic overseeding or replanting may be needed to maintain plant density.
- Avoid applying post-emergence grass herbicides or burndown herbicides on vegetative barriers.
- Washouts or rills that have broken through vegetative barriers will be filled with soil and transplanted to Alamo Switchgrass. Switchgrass for transplants will be taken from the lower side of the vegetative barrier in non-concentrated flow areas. Transplants should have a minimum of 4 - 5 viable shoots. Soil should be mounded 3 to 4 inches higher than the soil around the transplanted plants to force runoff through the adjoining areas of established barriers. Hay bales or sandbags placed above or below vegetative barriers may divert runoff and improve transplant survival. U anchors may also be used to anchor the transplants.
- Mowing of vegetative barriers will be managed to allow the planned height to exist before periods of expected runoff. To control excessive barrier height and encourage vertical growth and tillering, vegetative barriers will not be mowed below 15 inches. Mowing at layby of the cultivated crop will minimize competition with adjacent crops.
- Vegetative barriers will not be used as a field road or turnrow. Vegetative barriers should not be crossed with machinery, especially in concentrated flow areas.
- Vegetative barriers should not be burned. Year-old stems are very stiff and contribute to the effectiveness of the vegetative barrier.
- Crop tillage and planting operations will be parallel with the vegetative barrier.
- Vegetative barriers will be re-established or relocated as needed.
- Weed control will be by mowing no lower than 15 inches or by labeled herbicides.

