

## **FACT SHEET**

### **'CAVE-IN-ROCK' SWITCHGRASS**

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**UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
(FORMERLY SOIL CONSERVATION SERVICE)  
COLUMBIA, MISSOURI**

#### **GENERAL USE**

Like other warm-season grasses, 'Cave-In-Rock' switchgrass is noted for its heavy growth during June, July and August. It makes excellent pasture during those hot, summer months, and can be baled for hay. The stiff-stemmed, upright growth is rated excellent for wildlife nesting, brood rearing and winter cover. Its extensive root system provides excellent stabilizing cover for soil erosion control. Because of its stiff straw, it also may have value as a planting for field borders and wind barriers.

#### **HISTORY**

'Cave-In-Rock' switchgrass (*Panicum virgatum* L.) can be traced to a field near Cave-In-Rock, Illinois, where its seed was collected by R. K. Lawson and V. B. Hawk in 1958. The two men provided seed to the USDA Soil Conservation Service's Elsberry Plant Materials Center at Elsberry, Missouri. There, the plant's performance was compared with other field collections and commercially-available varieties of switchgrass. After many years of testing, 'Cave-In-Rock' switchgrass seed was released in March 1973 from the Elsberry Plant Materials Center for public use.

#### **CHARACTERISTICS**

'Cave-In-Rock' is a late-maturing, leafy, medium-course, lowland type of switchgrass. It is outstanding in seedling vigor, seed yields and freedom from disease. It has good straw strength, and does not lodge in spaced rows. At Elsberry, it reaches seed maturity in late September. As with other switchgrass varieties, it is a perennial bunchgrass that grows three to five feet tall. It and other switchgrass varieties can be distinguished from other warm-season grasses by the white patch of hair at the point where the leaf attaches to the stem. The stem is round and usually has a reddish tint. The seed head is spreading and open.

#### **ADAPTABILITY**

'Cave-In-Rock' switchgrass is winter hardy, and will grow in all areas Missouri, Illinois and Iowa. In fact, switchgrass is native to all areas of the United States except five states in the Northeast. It is adapted to a wide range of soils, but does best on fertile, well-drained soil. It will withstand droughty soil, but is better suited to moderately wet soil. Its tolerance to flooding is very good.

## **ESTABLISHMENT**

'Cave-In-Rock' switchgrass should be seeded in a pure stand when used for pasture or hay because it can be managed better alone than in a mixture. Its shiny, slick, clean, free-flowing seed can be planted with a drill or with a broadcast spreader.

It is best planted at a rate of about five pounds of pure live seed per acre from late April to mid-June. Spring seedings should be made in fine, firm seedbeds free of competition. Seedbeds should be firmed with a roller prior to the drilling or broadcasting of seed. If the seed is planted using the broadcast method, it also should be rolled afterward to help cover the seed. When drilled, seeds should be planted one-fourth to one-half inch deep.

No-till seedings in closely-grazed sod also have been successful where control of sod is accomplished with proper herbicides. In addition, early spring plantings (March-April) and fall dormant seedings (November-December) have been successful, and can provide weed and soil erosion control.

Another option is to seed switchgrass into a low population corn crop. Allow the switchgrass to become established while the corn is growing. Then after corn harvest, manage the switchgrass for pasture the next year. The preferred method is to use a drill to plant the switchgrass, and follow with a no-till planting of corn. Atrazine and 2,4-D may be used for weed control. Late spring or early summer plantings of switchgrass should not be made with a companion crop because of potential moisture stress.

Weed control with all plantings of switchgrass is important the first year. Switchgrass is atrazine resistant, and applying it at the label rate at or soon after planting will help control weeds.

Phosphorous and potassium should be applied according to soil tests before or at seeding. Nitrogen, however, should not be used at seeding time because it will stimulate weed growth. Fertilizer applied during the seeding year usually does not increase stand density, but will increase plant vigor. If nitrogen is to be used the first year, it should not be applied until mid-July, and then only on stands with limited weed competition. No more than 30 pounds of nitrogen per acre should be applied at that time.

Stand densities of 1.5 to 2 established plants per square foot in the spring of the second year is adequate for hay yields or pasture.

## **MANAGEMENT**

If weeds are a problem during the seeding year, 'Cave-In-Rock' switchgrass may be mowed at a four-inch height in May or a six-inch height in June or July. Grazing is not recommended the first year, but a vigorous stand can be grazed late in the year. Switchgrass begins growing late in the spring, making about 70 percent of its production after June 1. This makes its management quite different from cool-season grasses.

Established stands of 'Cave-In-Rock' switchgrass may be fertilized in accordance with soil tests. Generally, 60 pounds of nitrogen and 30 pounds each of phosphorus and potassium per acre is adequate for maximum yields. Apply the nitrogen after the switchgrass has begun to produce -- single application in mid-to-late May or a split application in both May and early July. Avoid high rates of nitrogen because carryover could spur cool-season grass growth and harm young plants the following spring.

'Cave-In-Rock' switchgrass may benefit from burning of plant residues at the initiation of spring growth. This decreases other plant competition, eliminates excessive residue and stimulates switchgrass growth. Switchgrass used for wildlife food and cover should be burned once every three to four years to reduce rodent populations and nest predators attracted by rodents.

Begin grazing 'Cave-In-Rock' switchgrass only after it has reached a height of 14 to 16 inches (usually late May). Grazing should be stopped when plants are grazed to within four inches of the ground in May, eight inches in June and 12 inches in late August. A rest before frost is a good idea to allow for carbohydrate storage in the stem bases and crown. This will help produce vigorous plant growth the next year. Switchgrass may be grazed to a height of six to eight inches after frost. The winter stubble is needed to provide insulation.

### **WHERE TO GET HELP**

For more information about 'Cave-In-Rock' switchgrass, contact the local office of the Natural Resources Conservation Service. It is listed in the telephone directory under "U.S. Government, Department of Agriculture, Natural Resources Conservation Service.

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