

# Establishing and Managing Switchgrass

Posted by:WCM-edit 3/22/2007 9:28:06 AM

Weedy grasses are much more difficult to control as few tools can control grass weeds without injuring switchgrass seedlings.

## Establishing and Managing Switchgrass

**Mark Renz, Extension Weed Scientist**

**Dan Undersander, Forage Agronomist**

Switchgrass (*Panicum virgatum*) is a vigorous warm season, native perennial. Switchgrass is adapted to Wisconsin, makes good grazing for livestock and excellent cover for wildlife. It does best on loams and sandy loams. Switchgrass begins growth in late spring and continues through the summer if moisture is available.

It grows 3 to 6 feet in small to large sodded clumps that spread slowly from numerous scaly creeping rhizomes. The leaves have a bluish cast and can attain a length of 2 feet. At the junction of the leaf blade and leaf sheath the ligule is a dense ring or cup of hairs on the upper leaf surface. The panicles are pyramid shaped with many purplish spikelets. Under native conditions it is usually found along creeks, streams and protected areas.

Switchgrass has relatively small seed averaging about 370,000 seeds per pound. The suggested seeding rate is 6 to 7 pounds of pure live seed when close drilled (8 inches or less between rows) or broadcast. Switchgrass should be planted in the spring with no cover crop after soil temperature is above 60° F.

Weed management can be very difficult while establishing switchgrass. Several management tools are available, but their effectiveness is based on the weed species present. In general, sites with extensive perennial weed infestations should be avoided as they are difficult to manage while establishing switchgrass. If possible, reduce the weedy grass populations as much as possible before planting. This can be done with repeated cultivations and/or burndown herbicide applications before planting switchgrass.

Annual broadleaf weeds emerging after planting can be controlled with mowing and/or the use of a labeled broadleaf selective herbicide (examples: Banvel, Clarity, Escort, 2,4-D, Weedmaster). If mowing new seedlings, leave at least 6 inches of stubble. If a broadleaf herbicide is used, wait until switchgrass plants have at least 3-4 leaves (or are 3-4 inches tall) before application to avoid injury.

Weedy grasses are much more difficult to control as few tools can control grass weeds without injuring switchgrass seedlings. Some herbicides have activity on weedy grasses while providing minimal injury to switchgrass seedlings (Pursuit, Certainty, Drive). While these herbicides are registered for use in Wisconsin, they have not been evaluated for efficacy and safety in switchgrass establishment under Wisconsin's growing conditions, so caution should be used. Please note that atrazine is not registered for use in switchgrass in Wisconsin.

Plant on a firm well prepared seedbed at a depth of 1/2 to 3/4 inch. Cultipacking after planting helps establish good contact with soil and speeds germination. Warm season grasses are slow to establish. Development of a root system is important so warm season grasses should not be grazed or cut during the seeding year unless growth is exceptional.

Sunburst is an improved variety of switchgrass developed by the South Dakota Agricultural Experiment Station. It reaches anthesis about two weeks earlier than Blackwell and has similar yields. It has better seedling vigor than most other varieties. Other varieties exist that grow well in Wisconsin.

Grazing can begin when switchgrass is 10 to 12 inches tall. This grass decreases with heavy use but can be managed successfully similar to other warm season pasture grasses. Its rapid early growth is especially palatable to livestock. It also

makes good hay if cut when seed heads begin to form. Switchgrass becomes rapidly unpalatable and low in quality as it approaches heading.

Pastures should be stocked with enough cattle to graze the switchgrass down to 4 inches within two weeks. Then cattle should be removed and the pasture allowed a month to recover. Graze regrowth to no shorter than 8 inches of stubble and leave for winter. The final grazing should be on or before Sept. 1.

If haying, cut at the boot stage leaving a 3- to 4-inch stubble. Then graze until late August leaving an 8-inch stubble.

<b>Herbicides for use in establishing switchgrass</b>				
<b>Herbicides</b>	<b>Active ingredient</b>	<b>Rate product/A</b>	<b>Timing</b>	<b>Cost/A</b>
<b>Broadleaf and grass control</b>				
Certainty <sup>#</sup>	sulfosulfuron	0.75-2.0 oz/a	PRE or POST 3-4 leaf*	\$50-135
Drive <sup>#</sup>	quinclorac	0.5-1.0 lbs/A	PRE or POST 3-4 leaf*	\$35-75
Pursuit + MSO	imazethapyr	2-4 oz + 32 oz	POST 3-4 leaf	\$10-20
<b>Broadleaf control</b>				
2,4-D	2,4-D	1-4 pints/A	POST 3-4 leaf	\$2-8
Cimmaron	metsulfuron	1/10 oz/A	POST 3-4 leaf*	\$3
Many	Dicamba	0.5-1.0 pt/A	POST 3-4 leaf	\$5-10
Weedmaster	2,4-D + Dicamba	1-2 pints/A	POST 3-4 leaf	\$4-8
* If POST add a nonionic surfactant (NIS) at 0.25% v/v				
<sup>#</sup> labeled for use in turf and in establishing native grasses.				

Information summarized by Mark Renz and Dan Undersander, 3/15/07

## Habitat Restoration

### The "Nuts and Bolts" of Establishing Prairie Grass

Switchgrass is the native warm-season prairie grass most often planted to provide wildlife habitat. Outlined below are some of the most important steps in establishing vigorous stands.

**BUYING SEED** - Purchase switchgrass seed in pure live seed (PLS) amounts - the seed that will grow minus dead seed and impurities. The PLS percentage times the bulk weight of the bag will give the amount of PLS in pounds in the seed sack.

**SEEDING EQUIPMENT** - Seeding equipment such as grain drills and no-till drills, must be capable of distributing the seed evenly at soil depth of  $\frac{1}{4}$  -  $\frac{1}{2}$  inch.

**PREPARING THE SEED BED** - The seed bed should be fine textured, firm, and free of weeds. Plowing, discing, harrowing, and rolling or cultipacking are generally all required to prepare quality seed beds regardless of seeding equipment used. If seed is broadcast on a firm seed bed, a second cultipacking is needed to form the soil around the seed and cover the seed properly. After seeding with a drill that has press wheels, rolling is not required unless much seed remains on the soil surface. Rolling should be done when the surface is dry. If the roller picks up soil, the soil is too moist and soil crusting may result which will limit seedling emergence. If the seed bed is excessively dry, rolling will not firm the seed bed until rainfall again moistens the soil.

**TIME OF SEEDING** - Switchgrass can be seeded in clean-tilled seed beds from late spring through early summer. Early seeding is preferable if soil moisture and temperature allow for proper seed bed preparation. Early seeding provides the best chance for adequate moisture in the top inch of the soil which increased the chance that the seed will germinate. Seedings before mid-May should not be made unless residual herbicides are used to control annual weeds.

**SEEDING RATES** - Seed the Blackwell variety of switchgrass at the rate of 4-6 pounds per acres of pure live seed.

**WEED CONTROL** - Atrazine may be used on switchgrass to control weeds. Read the label carefully and apply accordingly. Atrazine has been known to damage switchgrass if improperly applied or when it was incorporated with heavy rainfall on loose, dry soil or when applied on coarse-textured soils or soils with very low organic matter content. If residual herbicides are not used, planting should be made in late May or early June, but the seed bed should be prepared early to allow weed seeds to germinate and emerge. The weeds can then be killed with a contact herbicide such as glyphosphate. The switchgrass seed can then be drilled but the soil should not be disturbed thereafter because subsequent disturbance will encourage new weed growth.

### MANAGEMENT DURING ESTABLISHMENT

**First Year:** If broadleaf weeds are present, control them with 2,4-D after the grass seedlings are past the 4-5 leaf stage.

**Second Year:** Mow cool season broadleaf weeds in May. Cool season grasses can be controlled with atrazine before the switchgrass begins active growth. A light cutting of hay or light grazing may be possible in the second year but should not be done after August 1st.

**FERTILIZATION** - Do not apply nitrogen at seeding time on warm season grasses. It does not significantly benefit establishment of the grasses and will increase weed competition. On sites with low fertility, good weed control, and a good stand of switchgrass, apply 25-30 pounds of nitrogen per acre after mid-July of the seeding year.

**HAYING AND MOWING** - Switchgrass should be cut in mid-July. Do not cut the grass closer than 6 inches so that the growth response will be quick and vigorous and thus maintain healthier stands. Remove cut grass or hay bales as soon as possible to avoid damaging the grasses. For increased benefits to wildlife on areas larger than 15 acres, consider haying 1/3 of the acreage each year. The area to be hayed in July will produce better quality hay if it is burned the preceding April. Rotary mowing is not desirable because it results in a heavy accumulation of plant litter which will suffocate the grass.

**BURNING** - Burning is essential to properly maintain switchgrass. Even grass managed by grazing and/or haying still requires burning periodically to maintain vigorous growth and desired plant composition. Controlled burning stimulates the growth of

switchgrass, increases seed germination and the growth of broadleaf plants, creates open ground for wildlife, retards non-native species, and keeps maintenance costs low. Switchgrass should be burned on a 3-4 year rotation. To increase the benefit for wildlife leave 2/3 - 3/4 of the area unburned each year. Burning is best done about April 10th to maintain the best plant and animal conditions. Burn two weeks earlier or up to two weeks later on a given site every 3rd or 4th burn. Burns prior to April 1st are recommended to create a greater plant diversity which produces the best pheasant brood-rearing habitat. Burns approximately April 10 produce very thick switchgrass stands which produce the best grazing, hay production, and winter roosting cover for game birds. Burns after April 10 are helpful in controlling broad leaf weeds. Plan the burning program prior to establishing the switchgrass. Fire lines or low combustible fuels adjacent to switchgrass provide a margin of safety.

**Was this information helpful to you?**

**If so, why not support the Michigan Wildlife Conservancy's effort to restore precious wildlife habitat?**

Simply [click here](#) to make a tax-deductible gift.

[\[Return to Habitat Page\]](#)

Copyright 2008, Michigan Wildlife Conservancy, 6560 Drumheller Road, PO Box 393, Bath, MI 48808  
Phone: 517-641-7677 Fax: 517-641-7677 E-mail: [wildlife@miwildlife.org](mailto:wildlife@miwildlife.org)

Produced and hosted by IAS