



## Switchgrass Production Guide

These guidelines are being established to ensure that the grower has the appropriate management information to achieve maximum yields. They are based on the best information currently available but are subject to periodic updates and revisions as new information becomes known over time.

### Site Preparation

Soil tests should be conducted annually per protocol recommended by University of Tennessee Extension and submit to a suitable commercial soil testing laboratory for analysis under a Switchgrass for biomass protocol.

Preparation of the field for switchgrass establishment will significantly enhance growth through a reduction in weed pressure. If the field being established is an existing grass field, at least one glyphosate burndown of the field should be applied prior to planting and it is advised to consider two burndown applications.

### Planting

Switchgrass seed shall be a lowland variety.

Switchgrass for biomass feedstock production should be planted at a rate of 6.5 lbs. of pure live seed (PLS) per acre. Typical planting dates for switchgrass range from late April to mid June.

Switchgrass seed is quite small and therefore it is imperative that drill calibration has been completed accurately before attempting to plant. Given the size of the seed, small seed boxes should be used on the drill to ensure accurate metering as well. The seed can be planted into a tilled seedbed or no tilled. Recommended planting depth is  $\frac{1}{4}$ " to no deeper than  $\frac{1}{2}$ ". These depths are usually more manageable in no tilled soil conditions.

### Fertilizer

All fields should receive 60 lbs. Nitrogen per acre **after** the establishment year.

Application should occur during the period of April 15-May 15 depending on the season. Delaying application may result in uneven application if new standing biomass growth interferes with spreader distribution pattern.

If Urea is used as the N source, effort should be made to time application within two days of a significant rain event (>0.5 inches precipitation). If this timing is not possible, the use of Urea treated with a urease inhibitor (i.e. Agrotain) is necessary to prevent volatilization loss.

Fields with soil test levels indicating phosphorus in the low range should receive 40 lbs. per acre Phosphorus as P2O5.

Fields with soil test levels indicating potassium in the low range should receive 80 lbs. per acre Potassium as K2O.

Phosphorus and Potassium fertilizers can be applied after biomass harvest in the fall or winter or mixed with Nitrogen fertilizer during the spring application.

Fertilizer requirements may be filled in part with animal manures when those are available, and application can occur during the above specified time. Nutrient load of manure to be applied must be analyzed by an approved laboratory to understand the amount of nutrient need being applied. Application of manures should be conducted per best management practices to prevent the contamination of surface and ground water. The remainder of crop nutrient requirements not met by manures should be filled using commercial fertilizers.

### **Weed Control**

Fields should be scouted on a regular basis during the dormant post-harvest interval prior to green-up for winter annual weed growth. Winter annual weeds should be controlled at the appropriate time to maximize yield by preventing weed uptake of spring applied nitrogen.

Fields should be monitored throughout the early part of the growing season for broadleaf weeds and appropriate control methods applied prior to switchgrass biomass height preventing these operations.

### **Harvest**

Switchgrass, when managed for fiber production, is harvested once per year. In the one-cut system, the switchgrass is harvested once after November 1 or the first killing frost, whichever comes first. Normally, harvesting can continue through the winter months and extend through February. Single harvest of switchgrass after the aboveground growth is killed by frost will reduce nutrient removal and fertility needs. Genera requires that any crop received by our contracted growers must be in 4'x5' or 5'x6' round bale package and net wrapped at least twice as specified in the production contract.

Switchgrass should be cut at least 6 inches high using a mower conditioner. Bottom skid plates are available for some mowers or stop collars can be used on hydraulic cylinders to obtain the required cutting height. The taller stubble will protect stand survival, vigor and yield consistency as well as help reduce punctured tires by allowing equipment tires to push over the stubble.