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Vegetative Planting of Floodplain Grasses

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INTRODUCTION

Floodplain grasses can be divided into two groups - native and improved species. Native floodplain grasses can be either annuals e.g. wild rice grass (*Oryza rufipogon*) or perennials e.g. swamp rice grass (*Leersia hexandra*) and native hymenachne (*Hymenachne acutigluma*). Improved floodplain grass species are perennials, and include aleman grass (*Echinochloa polystachya*) and para grass (*Brachiaria mutica*).

Native floodplain grasses produce seed from which they propagate. Of the improved species, only para grass produces viable seed. Unfortunately, seed of native floodplain grasses is not commercially available and para grass seed is usually in short supply and expensive. Fortunately, most of the floodplain grasses produce runners from which they can be readily propagated. If you wish to plant native species, the perennials are the best choice because the re-establishment of annuals can be erratic. Some annuals can thrive in one wet season and not be seen the next.

An important factor to remember when choosing what to plant is that native species have more specific soil and water depth requirements. Para grass and aleman grass will both grow in a variety of soil types with different water depths. All grasses have a depth limit beyond which the water will be too deep for their persistence. For example, para grass has a limit of about 1.2 metres and aleman grass of about 3 metres.

PLANTING METHODS

Runners can be planted in a number of ways:

1. The simplest method is to throw runners from a vehicle, an airboat or a helicopter/plane onto standing water. The runners will float and will produce roots at the nodes. When the water recedes, the roots will take hold in the mud. This method is usually best used late in the wet season when the water level is receding.

Disadvantages: This method is risky as the runners can be stranded on top of existing vegetation when the water level drops and fail to take root. Also wind can push the floating runners to one end of the paddock/plain before the water level drops enough for the roots to take hold, resulting in all the planting material ending in one small area.

Advantages: Easy and simple.

2. Runners can be disced into the ground. This method should be carried out before the start of the monsoon season but after early showers when the soil is damp. Runners should be placed on the ground and then soil should be thrown on them, covering one or two nodes in each runner but not the entire runner.

Disadvantages: You need to use heavy machinery such as a tractor and a plough during a short period of time before it becomes too wet. Also this method of planting can make the area uneven.

Advantages: If you get follow-up rain on the runners, establishment should be good. Ploughing on contour will promote ponding which will assist in establishment of the runners.

Figure 1. Single-disc planter

3. Runners can be pushed into the soft earth by foot or steel disc. Planting by disc is faster and easier. Figure 1 shows a single-disc planter made by the author which has proven to be useful. It consists of a 500 mm diameter, 8 mm thick steel plate that rotates on bearings. It is suspended on a swing arm so when it is in the operating position it is pressing about 75 mm into the ground and is situated between two flotation wheels. In front of the press wheel is a seat for the operator who places the runners on the ground to be pressed.

   Provide enough space between the wheel and the operator to allow time for placing runners. A bin above the wheel and within reach of the operator allows for easy and continual access to runners. The runner should be laid in front of the press wheel in such a manner that a node on it is pressed into the soil on the same side of the press wheel as the growing point (Figure 2).

Disadvantages; Slow and monotonous method which makes the operator an easy target for mosquitoes and other biting insects.

Advantages: The disc planter is light, it can be pulled by a quad-bike, it is simple in design, cheap and easy to make, effective and can be used to a water depth of 100 mm.

TIPS

1. When using Methods 2 and 3 it is preferable not to cultivate prior to planting as rain can render the ground boggy and untrafficable.

2. It is a good practice to spray the strips to be planted with a herbicide such as glyphosate at least one or two days prior to planting. This will reduce competition from weeds and assist establishment, growth and spread of the runners.

3. Trials conducted at Beatrice Hill Farm indicated that spacing of 1 m between runners was best for optimum ground cover after one wet season. However, we recommend that you plant three rows of runners (a strip) 1 m apart and leave a gap of 3 m before planting the next three rows. The gap will allow you to plough or spray the following wet season and give the established pasture an opportunity to invade and occupy the area.

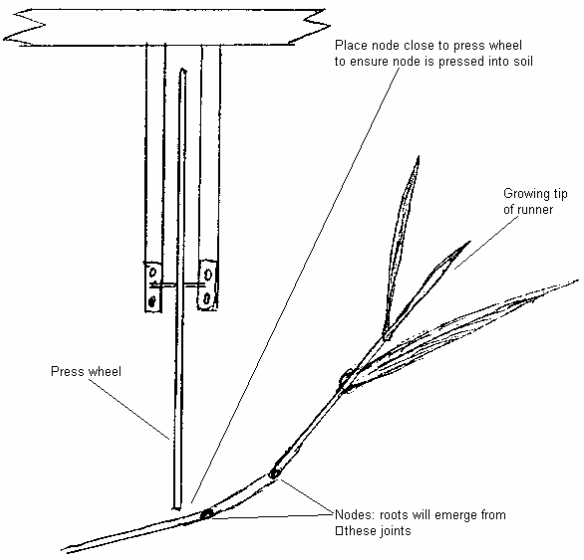

Figure 2. Use of a single-disc planter

4. Once the runners are growing, a basal application of nitrogen (urea) at the rate of about 50 kg/ha will stimulate growth and spread.

SOURCE OF RUNNERS

Runners can be obtained by (a) hand pulling, (b) raking and (c) cutting.

This should be done after first rains when the grass has greened-up and growing. It is at this time that runner production is most prolific.

Once you have collected the runners, you have two to three days (under ideal conditions) to plant them. Ideal conditions include keeping runners moist and as cool as possible i.e. storing in shady areas.

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