



SEEDS FOR YOUR SUCCESS

## ELEPHANT GRASS

*Pennisetum purpureum* x *Pennisetum glaucum* cv. Paraíso

Scientific name: *Pennisetum glaucum* x *Pennisetum glaucum*

Cultivate: Paraíso

Soil fertility: High

Form of growth: erect trunk

Plant Height: Up to 3.0m

Use: Direct grazing, silage and chopped green fodder

Digestibility: Excellent

Palatability: Excellent

Rainfall: Minimum of 1,200 mm per year

Drought Tolerance: Average

Cold Tolerance: High

Protein content: 8% in winter and 18% in summer in MS

Depth of planting: 0.5 to 1.0cm

Vegetative cycle: Perennial

Fodder production: 30 to 50 t / ha / year of dry matter (DM)

Humid soils: Low tolerance

Tolerable Altitude: From sea level up to 2,500m

Consortium: All legumes, especially those with a climbing habit

First cut: After 90 to 100 days after germination

Cutting height: 20 to 50cm in height. The higher the better

Cut interval: every 70 days

Coating fertilization: after each cut apply at least 80kg / ha of nitrogen and every 20t of green forage replenish 160kg / ha of KCl

## INTRODUCTION

The hexaploid hybrid Paraíso is a result of the crossing of the elephantgrass (*Pennisetum purpureum* Schum.) With millet (*Pennisetum glaucum* (L.)). This crossing added the nutritional quality of millet with the potential for high forage production of elephantgrass. hybrid was obtained through duplication of chromosomes by means of a chemical called Colchicine, which promotes cytoplasmic disruption at the time of meiosis, making the crossing viable and obtaining superior hybrids, including plants that produce viable seeds.

## PLANTATION

### a) Soil preparation

Before soil preparation, soil sampling is recommended for analysis. With the results look for a qualified technician to make the recommendations of liming and fertilization, respecting the requirement of the Paraíso elephant grass to the obtained results.

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The limestone must be applied to the soil at least 60 to 90 days before planting the seeds, so that it has to react in the soil, neutralizing the toxic aluminum and raising the pH. The incorporation of this limestone should be as deep as possible. It is recommended for this incorporation the use of plow or harrow. For a quantity greater than 3t / ha, the best results are obtained with the application, half before the plowing and the other half after the first harvesting.

Soil preparation should aim to eliminate existing vegetation, eliminate weeds and prepare the ground for the seeds to germinate and develop normally. If there are problems with compression, this should also be eliminated. For these operations various equipment can be used such as plow, harrow, leveler, subsoiler, etc.

The phosphate fertilizer normally used in planting can be applied before the last leveler, or during planting, and may even be mixed with the seeds, provided it is used on the same day.

**b) Distance between planting lines:**

The purpose of use is that it defines the distance between the planting lines:

- if it is to be used as cutting grass and the cut is mechanical, to provide green fodder chopped, for silage, the spacing should be: 0.80 to 1.00 m
- if it is to be used as cutting grass and the cut is manual, to provide green fodder chopped, for silage, the spacing should be: 0,50 to 0,70m

**c) Planting:**

**- Mechanical planting:**

It can be made with planters of different brands and models, as long as it allows a uniform distribution of the seeds and the depth of planting does not exceed 0.5 to 1.0cm. The seeds can be mixed with phosphate fertilizers, provided that the mixture is used on the same day. Never use nitrogen fertilizers and potassium together with the seeds, in planting these nutrients should also not be in contact with the seeds.

To facilitate the planting process we suggest that the seeds or even the seed + fertilizer mixture be placed in the fertilizer reservoir and not in the seed box. This facilitates seed flow during planting.

**- Semi-mechanized planting:**

This type of planting is done with a planter to distribute the fertilizer in the planting line and then the seeds are sown manually in the "furrows" left by the planter. In this case, be careful with the incorporation of the seeds and the depth of planting. Incorporation of the seeds can be done manually if the area is small or with the roller compactor if the area is large.

**Manual planting:**

- Manual planting is recommended for small areas and consists of extending a line in the soil to mark where the "groove" of planting will be. In fact if a groove is made there is the risk of the seeds getting very deep in the soil compromising their germination. In this process it is important to cover the seeds after seeding, it can be done with the feet or a small compacting roller.

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#### PASTOR MANAGEMENT

##### CUTTING PASTE - GREEN CUT FORAGE

Cuttings on the Paradise elephant grass should begin when the plants are well established, with a good development of the root system, this should occur about 90 to 100 days after the germination of the seeds.

After this first cut is important the maintenance fertilization, that is, the application of at least 80 kg / ha of nitrogen and 160 kg / ha of KCL to every 20t of green fodder produced. This fertilization should occur during the rainy season.

After this first cut the following will be performed at intervals of approximately 70 days. These cuts depend exclusively on the climatic factor (light, temperature and water). The maintenance / coverage fertilizer can be divided with each cut.

##### CUTTING PASTE - FOR SANDING

As with the previous recommendation, the first cut should be done after 90 to 100 days of seed germination and then at approximately 70-day intervals. The maintenance fertilizer should be the same as previously recommended under the same conditions.

The cutting height of the Paraiso plants should be around 30 to 40 cm from the soil. This height is the one that favors the regrowth of the grass. The cutting for silage should be as small as possible, being 2 to 3 cm recommended, as this facilitates the compaction process, which is one of the secrets of success in the making of forage silage.

To improve the quality of silage we recommend the use of additives that aid in the fermentation process and reduce the risks during the cooking process. The problem is the low percentage of pasture dry matter. The other option is to use products that absorb moisture and increase the percentage of dry matter, as are the cases of corn bran, soybean meal or any other grain.

##### DIRECT GRAZING

In the case of direct grazing the recommendation is the same, that is, we must place the animals when the plants are already properly fixed in the soil, with a good development of the root system. From 90 days of germination of the seeds we can already investigate the possibility of placing the animals for grazing.

It is important that the grazing is intensive, where the pasture has a period of 1 to 5 days of grazing and another period of 30 to 35 days of rest. These days can vary, both on days of use and on rest days, depending always on the climatic factor and the level of fertility of the soil. For this reason, maintenance fertilization as mentioned above is also important.

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## FORAGE PRODUCTION

The forage yield of the Paraíso elephant grass varies according to the age of the plant, as mentioned in Table 1. The forage yield, when the plant is 35 days old, is 5.2 t / ha dry matter, it has about 19, 2% crude protein and 66.5% digestibility. Plants with 105 days forage production is 14.5 t / ha of dry matter per cut, but the protein content decreases to 10.2% and the digestibility to 58.5%

Idade de corte (dias)	Altura da Planta	PMS (t/ ha)	PB (%)	FDN (%)	DIVMS (%)
35	0,6 m	2,5 d	19,2 a	61,2 c	66,5 a
70	1,2 m	8,6 c	13,6 b	68,8 b	62,3 b
105	2,5 m	14,5 b	10,2 c	70,6 b	58,5 c
140	3,5 m	22,6 a	9,1 d	71,5 a	50,2 d

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