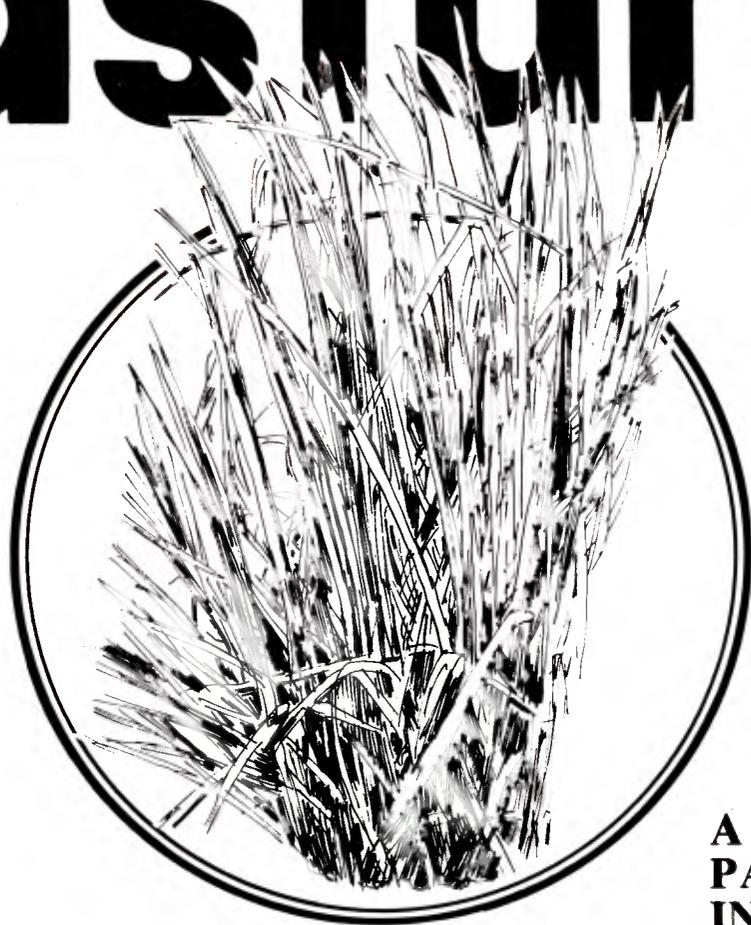


# Improve YOUR pastures



**A GUIDE TO  
PASTURE GRASSES  
IN BARBADOS.**

*by G.A. Proverbs,  
J.M. Keoghane and R.C. Quintyne\**

*\* B'dos Ministry of Agriculture  
Food & Consumer Affairs*

# A GUIDE TO PASTURE

The green revolution started in temperate countries is now well under way in the tropics. Unlike the pastures cultivated in temperate areas the plants used in the tropics have been domesticated only recently. In fact most of these have been developed in the past 35 years.

Productivity and therefore yield and vigour of most tropical (*Panicoid* and *Chloricoid*) grasses is MUCH higher than for temperate (*Festucoid*) grasses.

It has been said that the dry matter digestibility (DMD) of tropical grasses is 10-13% lower than for temperate species when compared at similar stages of growth. Most temperate species used for improved pastures exceed 65% but few tropical grasses are in this category. However, the reference to tropical grasses has invariably included species which should not be used for pasture improvement including many of the grasses already growing naturally in the Caribbean. If selected, or improved species of tropical grasses are studied then their DMD values are comparable to those of similarly managed temperate species.

However, the rate of decline of DMD in "improved" tropical grasses tends to be higher than for temperate species. Therefore, without good management, animals in tropical areas can be presented with a large amount of stemmy grass of low digestibility.

Consequently Barbadian livestock farmers should aim at using leafy grasses and managing their pastures to enhance their leafiness. They should aim at presenting their animals with as much ACCESSIBLE leaf as possible since voluntary intake of leaves is much higher than stems. Many selected grasses rapidly become stemmy; their yield might be quite substantial but the intake of feed by the animals is insufficient to give good production.

However, even some grasses with high or relatively high digestibilities do not promote good animal production because their intake is low.

In many cases the voluntary intake of a grass is unrelated to its digestibility. Therefore, we must be aware of animal preferences i.e. palatability when choosing grasses.

The first step in improving your pasture for milk or meat production is to know which grasses and legumes will thrive and persist under local conditions and which will be readily eaten by the animals. Consequently, this factsheet has been printed to help you identify and select grasses for your pastures.

## GIANT AFRICAN STAR GRASS

This is a perennial grass with creeping stems that root well. The grass as the name implies is native to East Africa. It is fairly drought tolerant growing in areas receiving 650 to 1200mm (26 to 48 inches) annual rainfall.

Giant African Star is planted by stem cuttings. It makes excellent hay which is highly palatable. Several legumes can form relatively successful associations with this grass including Mexican Macro or Siratro (*Macroptilium atropurpureum*), Glycine (*Neonotonia wightii*), and Rabbit Vine (*Teramnus labialis*).

(*Cynodon plectostachyus*)



(*Digitaria decumbens*)



## PANGOLA GRASS

This low creeping perennial found throughout the Caribbean originated in South Africa. Pangola is essentially a wet region

grass flourishing in areas receiving more than 1000mm (40 inches) of rain annually.

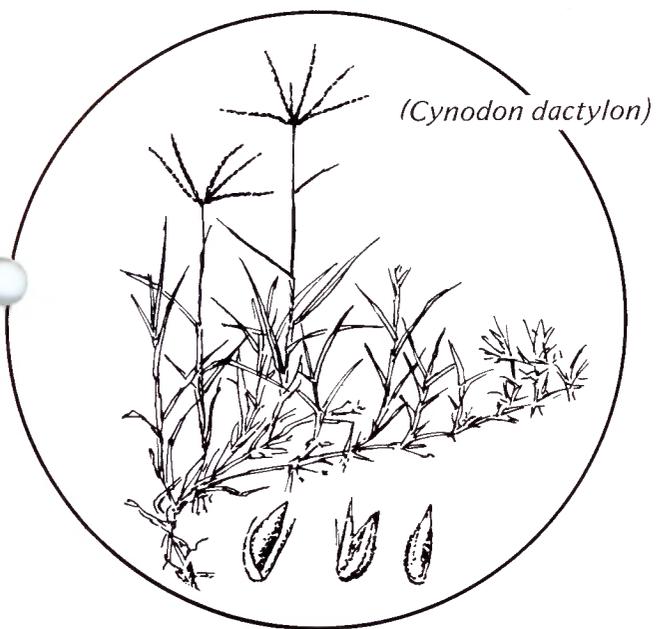
Pangola has both a high digestibility and intake at early, leafy stages of growth but shows a marked drop-off as plants become mature and stemmy. It has a high carrying capacity UNDER GOOD CONDITIONS. It is difficult to keep a strong component of selected legumes with Pangola.

Pangola pastures can only be established through vegetative cuttings.

# GRASSES IN BARBADOS

## COASTAL BERMUDA GRASS

This is a hybridized relative of "devil's grass". Unlike "devil's grass" it has a relatively high nutritive value. It is the major pasture grass in the S.E. United States. If well fertilized, it has a very high protein content. It has a fair to moderate drought tolerance. Coastal Bermuda grass has a fair to moderate drought tolerance. It should be grown in areas with an annual rainfall of 700 to 2000mm (28 to 80 inches). Plantings are from stem cuttings.



## ELEPHANT GRASS

This tall, bunch type perennial is also a native of Africa. It should be cultivated in areas receiving more than 1000mm (40 inches) of rain per annum. Its widest use has been in dairying in high rainfall regions. This grass resembles cane and has very thick, strong stems. Every effort should be made to keep the plants in a dense leafy state through effective grazing and cutting. Aim to graze or cut this grass when it reaches 1.2m (4 ft.) high.

Elephant grass spreads by short, stout underground stems to give stools up to 1m (3 feet) across.

The cuttings are best selected from hard stems about six months old, each piece possessing four or five nodes (stem joints).

Several planting methods can be used

1. 3-5 node cuttings can be laid horizontally or,
2. the farmer can lay complete stems horizontally or,
3. rooted tillers can be planted upright or,
4. 3-5 node cuttings can be planted basal end down, on an angle with 2-3 nodes below and 1-2 above the ground.

Information on Elephant grass management is somewhat confusing. No doubt height of cutting is related to cutting frequency; the more frequent the grass is cut, the higher the cutting height should be.

Elephant grass can be grown on its own plus fertilizer nitrogen (<sup>N</sup>) or organic manure or with climbing legumes e.g. Siratro and Glycine. Highest dry matter yields are with pure stands and high levels of fertilizer N but when there is a strong legume component there will be a higher crude protein content in the herbage (grass plus legume) and a lower long-term cost.

To help maintain a strong legume component elephant grass rows should usually be about twice as far apart (2 metres or 6 ft) as for pure stands i.e. reduce competition.



## **BAMBATSI GRASS**

This is a highly drought resistant grass. It will produce well in areas receiving as little as 400mm (16 inches) annual rainfall. It is planted by seed or root cuttings. The seeding rate for Bambatsi grass is 2 to 4 kg per hectare (2 to 4 lbs per acre). It with stands heavy grazing.

*Panicum coloratum* = *Makarikari grass* — Bambatsi is one of several varieties of the Makarikiense form of *P. coloratum*. Very well adapted to heavy clay soils withstanding considerable waterlogging as well as severe droughts. Seedlings have low vigour and therefore are difficult to establish (weed problem). Very palatable; good quality herbage. Forms excellent associations with climbing legumes such as Siratro and Glycine.

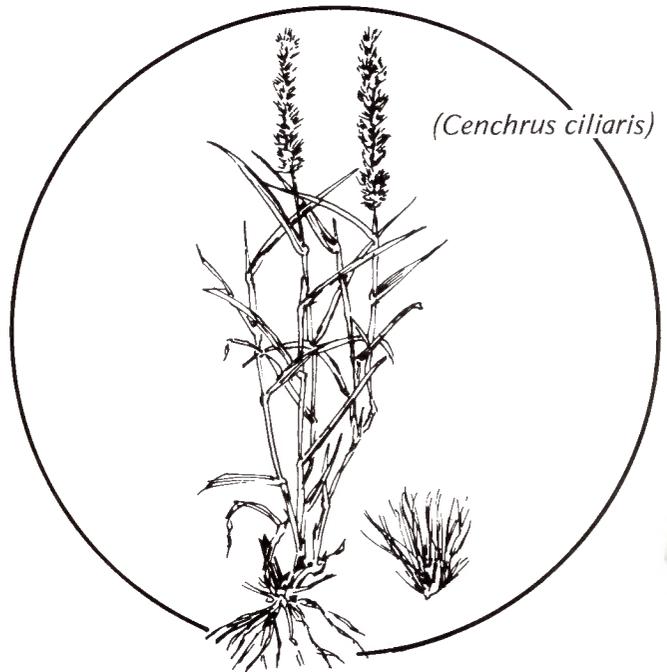


(*Panicum coloratum*)

## **BUFFEL GRASS**

This is another native perennial grass of Africa. It is very variable in habit. Not only is it drought resistant, but it also withstands very heavy grazing once it is established in the drier regions with annual rainfall between 300 and 1000mm (12 to 40 inches).

Buffel grass is planted from seed at the rate of 1 to 4 kg per hectare (1 to 4 lbs per acre) in mixtures. Seeds establish readily, and the flow of seed in planting machinery can be improved by mixing with sieved damp sawdust or sand.



(*Cenchrus ciliaris*)

## **GUINEA GRASS**

This is an erect bunch grass, native to Africa and widely cultivated in South America, South-East Asia and the West Indies.

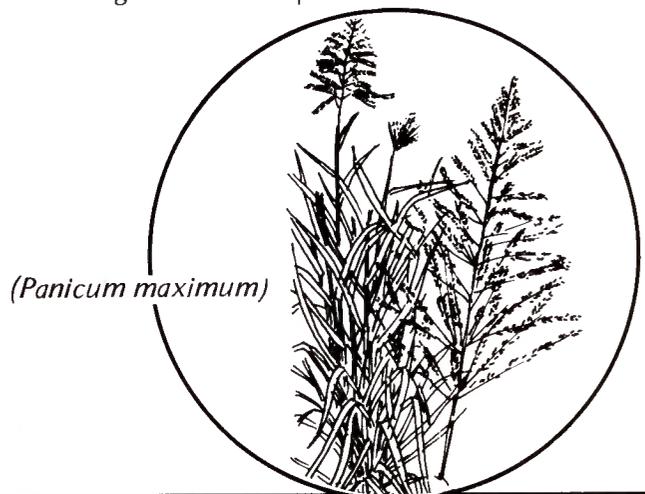
It prefers areas receiving more than 900mm (36 inches) rainfall annually.

Seed can be successfully produced locally and local, medium height forms are worth planting in improved grass/legume pastures. Avoid using any "Giant" forms which are very stemmy. Seeding rate for Guinea grass in mixed pastures is 2 to 6 kg per hectare (2 to 6 lbs per acre). The seed is normally broadcast when sowing, however if the land is cultivated after broadcasting care should be taken not to cover the seed deeply — 6mm (0.25 in) is quite adequate.

Guinea grass is highly palatable and therefore is selectively grazed. Consequently, new stands should be dominated by Guinea grass or else less palatable grass species will begin to take over. e.g. In a Seymour grass or Sour grass mix with Guinea.

Don't sow fresh seed; germination improves following good storage (cool and air-tight) for at least six months.

One advantage of Guinea grass is its shade tolerance. It can be grown under trees and bushes and there are a number of commercially available varieties but CARDI's Forage Research Project in Antigua has found that the local varieties are as good as the improved ones.



(*Panicum maximum*)