THE MULBERRY

A Multi-purpose Plant with potential for improving Livestock Production in Trinidad and Tobago

compiled by

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with potential for improving
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The Mulberry (Morus Indicus)

INTRODUCTION

The Mulberry is a temperate plant that is grown primarily for feeding its leaves to the silkworm. Inspite of its origin, it grows well under a wide range of conditions from sea level to 3000m.

The foliage is nutritious, platable and highly digestible making it suitable for feeding of livestock, ruminants, as well as, non ruminants. It is also reported to be of great medicinal value.

There are three types of mulberry, named according to the colour of the fruit.

Red Mulberry

This is also called the American Mulberry. These can be found growing wild in certain parts of the United States. The trees reach heights of 18 metres and produce red fruit that are fed to pigs and poultry. Birds also relish the fruit.

Black Mulberry

Grown throughout Europe for the juicy, crimson black fruit, which can be eaten fresh, or used to make jams, preserves and wines. Trees grow up to 10 meters.

White Mulberry

They are used mainly in the silk industry and are referred to as the silkworm mulberry.

ESTABLISHMENT

Land Preparation

The plants grow best on fertile, well-drained soils. When grown on soils with impeded drainage, a ridge and furrow land preparation system with planting on ridges is recommended.

Planting Material

The crops can be established by seeds or cuttings. Cuttings are the preferred method.

Propagation

Stakes should be obtained from mature branches and cut into pieces approximately 15 cm long with no less than 3 buds. These should be planted out within a few days. Where there is need to keep them longer, they should be placed in a cool, moist environment to prevent them drying out. Where irrigation is available, they should be planted at the start of the wet season. Alternatively, cuttings may be set in grow bags filled with soil medium. Stem bases may be dipped in #2 rooting hormone to assist with root development.

Spacing

Plants should be spaced 50cm within the row and 1 metre between rows, giving a plant population of 20 000/ha. In the early stages, weeds must be controlled. Cuttings root quickly and may attain a height of 75cm in 6 weeks and 1.3m in 10 weeks.

Fertilizer Applications

Mulberry is not a legume. They require fertile soils to produce well. The nutrient status can be made from organic (manure) or inorganic fertilizers. Where inorganic fertilizers are utilised, a side dressing with 12.24.12 at a rate of 200kg/ha (10g/plant) should be applied at planting, followed by 20.10.10 at a rate of 250kg/ha (10gms/plant) 1 month after planting. Additional fertilizers should be applied after every harvest, at the same rate.

Weed Control

In the early stages, weed control is very important, as plants will not tolerate heavy weed infestation. Either manual, mechanical or chemical weed control may be used.

Pest Control

The plant is reported to be relatively free of pests in Costa Rica. However, it is known to be susceptible to the Pink Mealy Bug in some areas.

Diseases

No major disease problems have been reported out of Costa Rica, but the plant is known to be affected by diseases such as leaf spot.

Harvesting

The first harvest can be conducted after 3-4 months. Subsequently, the plant may be harvested every 2 months in the wet season, and every 3 months in the dry season. It is recommended that material be cut and carried to the stock, although it can be grazed.

Yield

Yields are influenced by various factors including soil moisture and fertility. However, under average conditions, mulberry is expected to yield 40 tonnes of fresh material/ha/year (12 tonnes DM/ha/annum).

Protein Yield

Mulberry yield material with about 20% protein. With a yield of 12 tonnes DM/ha/annum, total protein yield/year is 2400kg.

Feeding Potential

Diary cows producing approximately 3000kg of milk per year require an annual protein intake of 165kg. Hence, 1ha of mulberry can provide enough protein to feed 14 such cows per year, assuming that the forage is fed to meet the protein requirements of animals. Each cow will have to be restricted to an average of approximately 8kg fresh material per day. The balnace of the fibre needed can be met by grass or other fibre source.

Nutritional Value of the Mulberry

Component	Leucaena Leaf	Alfalfa Leaf	Mulberry Leaf
Total ash	11	16.6	
Crude Protein	14-22	26.9	18-28
ADF	20.4	21.7	
Calcium	2.36	3.15	2.74
Phosphorus	0.23	0.36	0.45
Potassium	1.4	2.21	
DM digestibility	60	70	85

MEDICINAL VALUE OF MULBERRY [1]

Mulberry fruit juice is used in folk medicine remedies for tumours. It is reported to also be an astrigent, bactericide, expectorant, fungicide, laxative, refrigerant, restorative, sedative, tonic and vermifuge. White mulberry is used in folk medicine for arm ache, asthma, bronchitis, bug-bites, cold, cough dropsy, constipation and diarrhea, edema, epilepsy, fever, headache, hyperglycaemia, hypertension, inflammation, insomnia, melancholy, menorrahagia, snake bite, sore-throat, stomatitis, tumours, vertigo and worms.

Medicinally, fruits are laxative, refrigerant in fevers and used for treating sore throat. Roots and barks are purgative, anthelminthic and astringent. A deconcuction of leaves is used to gargle for inflammation of the throat.

[1] *Source: Duke Handbook of Energy Crops.*

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