



## Introducing **Mulato**: *An Improved Forage for the Caribbean*

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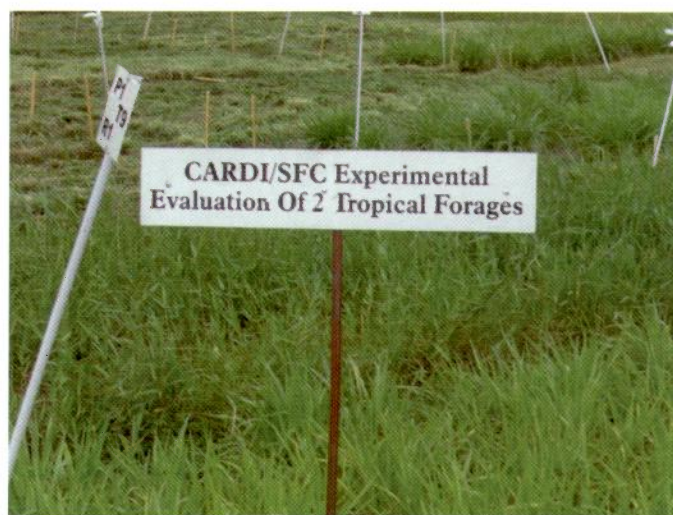
**Figure 1:**

**Mulato - an improved grass that signals new hope for livestock farmers**

Mulato (*Brachiaria* hybrid CIAT 36061, Figure 1) and Mulato II (*Brachiaria* hybrid CIAT 36087) are improved grasses recently introduced into Trinidad and Tobago. They are the result of more than 20 years of research by the International Centre for Tropical Agriculture (CIAT) in Columbia. In 2003, CARDI imported seeds of Mulato and initiated research, in collaboration with the Sugarcane Feeds Centre (SFC) at the latter's field station, to determine its suitability for local livestock production. The other collaborators on this work are the Ministry of Agriculture, Land and Marine Resources (MALMR) and the University of the West Indies (UWI).

Given the rising price of grain on the world market and the escalating costs of other commodities, CARDI is recommending forage-based feeding systems for ruminant livestock production. This is the main reason that we are continuously conducting research (Figure 2) to find suitable forages for ruminant livestock. Mulato and Mulato II are *Brachiaria* hybrids of *B. brizantha*, *B. ruziziensis*, and in the case of Mulato II, *B. decumbens*. They are closely related to Tanner grass (*B. arrecta*), which is the species most commonly used in local pasture systems.

Tanner has proven to be very successful as pasture grass because it is easy to establish (from cuttings), quick growing, well adapted to acid soils and is very palatable to ruminant livestock. Although Mulato and Mulato II are propagated by seed and require special land preparation and agronomic care of seedlings, these grasses represent a significant improvement over Tanner grass in terms of dry matter yield, leaf to stem ratio, nutrient content, pest resistance and persistence.



**Figure 2:**

**Research to compare Mulato with Tanner grass**

Mulato can be established vegetatively, however, growth and yields through this method are still being evaluated by CARDI. Owing to the nature of its rooting system, Mulato has been able to withstand grazing and trampling by livestock and the regrowth after grazing has been quick. What is also very exciting about these grasses is that CARDI's research is showing that they are very adaptable to local conditions. Since the first introduction of Mulato and the research that showed its adaptability to acid infertile soils and drought conditions, Mulato II, which represents an improvement over Mulato, was released by CIAT and introduced into Trinidad and Tobago by Nestlé, Trinidad and Tobago Ltd.. These grasses grow best in well-drained soils of medium to high fertility with pH 4.5-8.0 but can grow in less fertile acid soils with high aluminium.

They also respond strongly to the application of nitrogen fertiliser.

Work done by CARDI scientists shows that Mulato has a crude protein content ranging from 8-18% (depending upon time of harvest and soil fertility levels) and dry matter yields of about 25 tonnes per hectare per year. This has prompted Nestlé to import large quantities of the seed and together with the MALMR, has made it available to dairy farmers for pasture establishment. In 2007, more than 120 hectares of Mulato pasture were established under this collaborative programme.



**Figure 3:**

**Dairy farmer Mahadeo Bholai is very proud of his Mulato grass pasture**

CARDI is working with Nestlé and the UWI to set up model dairy farms to demonstrate the best practices required to increase profitability. One aspect of this work is pasture establishment using Mulato. Dairy farmers are already reporting increases in milk yield when Mulato is fed to milking cows. One of the model farmers, Mr Mahadeo Bholai (Figure 3) from Carlsen Field has reported a 23% increase in milk yield.

In the past, there were other forage introductions, like Pangola (*Digitaria decumbens*) and African Stargrass

(*Cynodon nlemfluensis*) but these did not persist over the years.

Mulato is already demonstrating persistence in pasture systems. This is because unlike most of the other exotic grasses, Mulato has genes that make it adaptable to acid soils. Most ruminant livestock production in this country is done on infertile, acid soils that are often unsuitable for other forms of agriculture. Tanner grass, a cousin of Mulato has continued to persist for this very reason. The similarities between these two species in terms of adaptability to local conditions indicate that Mulato should at least be equally successful. Its added value, in terms of higher yield and nutrient content, compared to Tanner grass, gives it a decided advantage.

In Mexico and other parts of Central and South America, Mulato seed production is becoming big business. This makes it easier for farmers living in those places to access the germplasm and establish pastures for their livestock. Farmers are benefiting from this valuable feed resource, which enables them to reduce production costs and increase profitability. Scientists at CARDI, SFC, UWI and MALMR, and Nestlé Trinidad and Tobago Ltd. are already seeing results in the field and are recommending this high quality forage species to local ruminant livestock farmers.



**Figure 4:**

**Dairy cow grazing Mulato on model farm**

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