

Characteristics

Commercial name	Mulato II grass
Scientific name	Brachiaria ruziziensis x B. decumbens x B. brizantha cv. Mulato II
Growth habit	Tillered; semi-decumbent
Palatability	High
Digestibility	High
Protein potential	Up to 18%
Tolerance to waterlogging	Poor
Tolerance to drought	Good
Planting density	8-10 kg/ha; zero tillage
Days to first grazing/cut after germination	70-80 days on average
Time in rotation	25-45 days
Minimum height for animals to exit the paddock	25 cm
Soil fertility requirement	Intermediate to high
Adaptation in m above sea level	0-1200 m above sea level
Adaptability to soils with acid pH	High
Resistance to spittlebug attack	High
Uses	Grazing, hay, silage, fresh in feeding trough



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Mulato II Brachiaria Hybrid cv CIAT 36087

Mulato II hybrid brachiaria is a unique perennial grass to improve beef and milk production in tropical and subtropical regions. It is recommended for regions with acid soils of medium and low fertility, prolonged periods of summer drought, high summer temperatures, and in South America where there are risks of attacks from spittlebugs.

Main characteristics

- More meat and more milk with improved quality
- Higher stocking rates
- Highly palatable
- Tillered, with semi-decumbent growth
- Resistant to diseases and pests (spittlebug)
- Greater tolerance to drought and summer stress

Scientific name: *Brachiaria ruziziensis* x *B. decumbens* x *B. brizantha* cv. Mulato II

Origin and Breeding

Mulato II is a three-way hybrid (*Brachiaria ruziziensis* x *B. decumbens* x *B. brizantha*). Mulato II is the result of three generations of crosses and screening carried out by CIAT's tropical forages project. Mulato II was developed at CIAT in Colombia from an original *B. ruziziensis* x *B. decumbens* cross, followed by 2 generations of hybridisation by open exposure to *B. brizantha* pollen in the field and was commercially released by Grupo Papalotla in 2004. It is the second *Brachiaria* hybrid developed by CIAT, and being an apomictic hybrid it is genetically stable and does not segregate or divide from one generation to the next.



Morphological Description.

Mulato II is a leafy, vigorous, semi-decumbent perennial grass of medium height, growing to between 80-100 cm without inflorescences. It is a very leafy plant, with 5-8, long (40-60 cm), broad (6-7mm) leaves per stem. The intense green leaves are strongly pubescent on both sides of the leaves. Pubescence on the cylindrical stems is weak.

Productivity and Forage Quality.

In Thailand on low fertility, acid soils (pH 4.7), Mulato II produced between 14 and 17 t/dry matter/hectare/year. 70% was produced in the 6 month wet season and 30% in the 6 month dry season without irrigation. Mulato II produces a very high leaf DM percentage. In trials in Thailand with other *Brachiarias* cultivars, Mulato II produced 71% leaf DM in the wet season and 86% leaf DM in the dry season, significantly more leaf DM than ruzi, signal, Marandu and Toledo.

In southern China on better soils (pH 6.3), Mulato II planted at the end of April, produced 35 t/dry matter/ha in seven months, with 11% crude protein, low fiber and a high leaf ratio (85%).

In trials in Central and South America, Mulato II produced more dry-season forage and had better milk production over time than Mulato and other *Brachiaria* cultivars.

Crude protein levels.

10-14% crude protein in Thailand on poor soils and 12-18 % crude protein on better soils in Florida, USA.

Animal production.

In Florida USA, young beef cattle grazing Mulato II pastures at 4-6 heifers/ha, averaged 0.4-0.6 kg, liveweight per day with no concentrates.

In work carried out by CIAT, milk production of cows grazing different types of *Brachiaria* cultivars was studied. Milk production from cows grazing Mulato II produced 11% more milk during the dry season and 23% more milk during the wet season compared to production from cows grazing signal grass or Toledo.

In Mexico, dairy cows grazing Mulato II produced 30% more milk than cows grazing signal grass because of better forage quality and persistence, which allowed for higher stocking rates.

Drought tolerance.

Mulato II has an extensive root system which allows it to tolerate drought and enables it to have rapid regrowth at the onset of the wet season. Its pubescent leaves, allows Mulato II to efficiently use moisture deposited on the leaves by the evening dew until late the next morning.

In trials in Thailand, Mulato II produced significantly more dry-season DM and significantly more dry-season leaf DM than ruzi, signal, Marandu and Toledo *Brachiaria* cultivars

It is the ability of Mulato II to maintain green leafy DM during the dry season (85% leaf ratio) that makes it an outstanding, dry season forage.

Adaptation to acid soils.

In Thailand, Laos and Vietnam, Mulato II grows very well on very acid soils with a pH of 4.5-5.0 and will tolerate soils high in levels of Aluminium. However, for persistence, phosphate fertilizer must be applied to the Mulato II pastures to avoid aluminum toxicity. In trials on highly acid soils in Thailand, Mulato II over 3 years produced significantly more DM and leaf DM than other *Brachiaria* cultivars.



Shade tolerance.

Mulato II will grow well in semi-shade conditions (50%-70% sunlight) between plantation crops such as rubber, coconuts and fruit trees.

Grazing and cutting management:

Can be either rotationally grazed or set stocked. Management depends on the farmer's experience. However, because of its superior forage quality and excellent forage production, Mulato II is very suitable for intensive rotational management. Mulato II is a sturdy and robust plant that tolerates trampling and has a rapid recovery rate following grazing. During the wet season, 30-40 day rest periods between grazings are recommended depending on soils and fertilization. During the dry season, without irrigation, longer rest periods of 50-60 days are recommended.

Most farmers in Southeast Asia prefer cut-and-carry, feeding their cattle in stalls. Cutting to about 5 cm above ground level every 40-45 days in the wet season and 60-70 days in the dry season is recommended.

On good soils with fertilizer applied, quicker recovery periods between grazings (25-30 days in the wet season) and more frequent cutting can be practiced.

Mulato II is very suitable as a high quality forage to make hay and silage.



Establishment:

Can be either planted in rows, 40-50 cm apart, or broadcast sown at 10-12 kg/ha. For drilling the seed through seed drills, be very careful not to bury the seed more than 2 cm in depth. Roller drills are preferred because they do not bury the seed too deeply, but instead press the seed just below the soil surface.

For broadcast sowings, seed can be spread mechanically or hand sown. The seed must be covered after sowing by harrows. On small areas, tree branches or large brooms can be used to lightly cover the seeds with soil. Be careful not to bury the seed no more than 1-2 cm under the soil.

Seeds:

Mulato II seed is acid scarified to give seed high viability (90%+), high germination (80%+) and high purity (98-99%). This good quality ensures rapid establishment of pastures.

Fertilizer To maximize DM production, Mulato II grows better on medium to high fertility soils. Annual fertilizer applications of between 250-300 kg/ha of NPK fertilizer are recommended. Mulato II will also grow well on low fertility soils but with lower levels of production. Higher and more frequent fertilizer applications are necessary on low fertility acid soils.

