Brachiaria spp. hybrids

Scientific name

*Brachiaria brizantha* x *B. ruziziensis* artificial hybrids
*Brachiaria ruziziensis* x *B. decumbens* x *B. brizantha* artificial hybrids

Synonyms

*Urochloa brizantha* x *U. ruziziensis*
*Urochloa ruziziensis* x *U. decumbens* x *U. brizantha*

Family/tribe


Common names

brachi hybrid, brachiaria hybrid.

Morphological description

Cv. Mulato (*B. brizantha* x *B. ruziziensis*),
Perennial with a semi-erect growth habit, spreading by rooting from lower culm nodes. Leaf blade is linear-triangular in shape, broad, dark green, both abaxial and adaxial surfaces densely covered with long hairs. Leaf sheath is densely pubescent. Ligule membranociliate, short. Stigmas pink. Inflorescence is a panicle 12 cm long, with 4–8 racemes about 6 cm long, and spikelets arranged in two rows on each raceme.

Cv. Mulato II (*B. ruziziensis* x *B. decumbens* x *B. brizantha*) is very similar in appearance, but has shorter hairs on the leaf, and has white/cream stigmas.

There are currently two Brachiaria spp. hybrids developed as forages and further combinations of species may be developed as hybrids in the future.

Distribution

Does not occur naturally.
Artificial hybrids suited to the tropics to 1,800 m asl and the subtropics at low altitudes.

Uses/applications

Permanent pasture for grazing and cutting.

Ecology

Soil requirements

Well-drained soils of medium to high fertility with pH 4.5–8.0 but can grow in less infertile acid soils with high Al. Will respond strongly to added N on deficient soils.

Moisture

Adapted to annual rainfall of 1,000–3,500 mm with good production in the dry season.

Temperature

Tropics to 1,800 m asl and warm subtropics.

Light

Likely to be similar to *B. brizantha*, having intermediate shade tolerance compared with other tropical grasses.

Reproductive development

No information available.

Defoliation

Tolerates intensive grazing at high stocking rates but benefits from a rest period.

Fire

Burning is not recommended, but ‘Mulato’ will probably recover from an occasional fire.

Agronomy

Guidelines for the establishment and management of sown pastures.

Establishment

Cv. Mulato can be planted from seed planted into a well-prepared seedbed at 4–6 kg/ha seed. In common with *B. brizantha*, freshly
harvested 'Mulato' seed will remain dormant for several months, so that seed must be stored or acid-scarified prior to planting. Can be planted vegetatively from stolon cuttings. Establishes rapidly, achieving 85% ground cover at 2 months after seeding at 5 sites in Honduras. Can be lightly grazed after 3–4 months.

**Fertiliser**

Responds well to additional nitrogen fertiliser.

**Compatibility (with other species)**

Will combine with aggressive creeping legumes.

**Companion species**

Legumes: *Arachis pintoi*.

**Pests and diseases**

Cv. Mulato has partial resistance to spittlebugs. In the ongoing breeding program at CIAT, a group of hybrids has been identified with high levels of antibiosis resistance to spittlebugs *Aeneolamia varia, A. reducta, and Zulia carbonaria*, whilst another group of hybrids showed field resistance to *Z. pubescens* and *Mahanarva trifissa*.

**Ability to spread**

Spreads rapidly by rooting from lower culm nodes.

**Weed potential**

Likely to be similar to *B. brizantha*, having potential to colonise disturbed areas.

**Feeding value**

Nutritive value

Cv. Mulato has excellent nutritive value. For 90 day and 168 day regrowth in Colombia, CP was 13.1% and 10.6%, respectively, and IVDMD 70.0% and 70.6%, respectively.

**Palatability/acceptability**

Cv. Mulato is reported to be highly palatable to grazing ruminants.

**Toxicity**

None reported, but may cause skin photosensitization.

**Production potential**

**Dry matter**

High yielding and vigorous. Produces 10–25% more DM than *B. brizantha* or *B. decumbens*. In Tabasco, Mexico, yields of up to 25 t/ha DM have been reported.

**Animal production**

Individual cattle LWGs of up to 0.9 kg/head/day were reported following short periods of grazing in Honduras.

**Genetics/breeding**

The breeding program at CIAT, Colombia, is attempting to increase resistance to spittlebugs, and improve nutritive quality and DM production of *Brachiaria* species through selection and interspecific hybridisation. The program has made use of a cross-compatible, sexual tetraploid biotype of *B. ruziziensis* combined with tetraploid apomicts of *B. brizantha* to produce the hybrid, 'Mulato'.

A second hybrid accession, ‘Mulato II’ was developed from three generations of hybridization, commencing with the original *B. ruziziensis* x *B. decumbens* cross. In subsequent generations, sexual parents were exposed to pollen, either from hybrids with *B. brizantha* or from *B. brizantha* accessions, through open pollination. Microsatellite data clearly show that ‘Mulato II’ has alleles that are absent from the *B. ruziziensis* parent and also absent from *B. decumbens* cv. ‘Basilik’, but that are present in ‘Marandú’ and/or in other accessions of *B. brizantha*.

**Seed production**

Poor and not recommended at farm level.

**Herbicide effects**

No information available.

**Strengths**

- High DM production.
- Good forage quality.
Tall vigorous grass for cutting.
Tolerance to spittlebug.

Limitations
- Low yield of pure live seed.
- Viability of crude seed is poor.
- High soil fertility requirements.

Selected references

Internet links
http://www.grupopapalotla.com/html/ingles/mulato/prod_mulato_ing.htm#mulato
http://www.affa.gov.au/content/pbr_database/docs/2004043.doc

Cultivars

<table>
<thead>
<tr>
<th>Cultivars</th>
<th>Country/date released</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mulato</td>
<td>Mexico (2000)</td>
<td>Derived from an initial cross made in 1988 between a tetraploid <em>B. ruziezensis</em> clone 44-6 (sexual reproduction) and <em>B. brizantha</em> cv. Marandú (tetraploid, apomictic seed production). Tested for agronomic performance in small-plot field trials and regional trials in Colombia, and has also been widely distributed through CIAT’s regional trial network for adaptational/agronomic testing in Central America, Philippines and China. Final selection was based on tolerance of high soil aluminium, plant vigour, DM production and forage quality.</td>
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Promising accessions

<table>
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<tr>
<th>Promising accessions</th>
<th>Country</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIAT 36062 (BR93-NV/1371)</td>
<td>Brazil</td>
<td>Better resistance to spittlebug than <em>B. brizantha</em> accessions (other than Marandu).</td>
</tr>
<tr>
<td>FM9503-5046-024</td>
<td>Colombia</td>
<td>Excellent adaptation to both low and high fertility environments on the Colombian Llanos. Moderate resistance to spittlebug.</td>
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High palatability.