

Screening *Brachiaria* hybrids for resistance to the pasture spittlebug *Notozulia entreriana* (Berg, 1879) (Hemiptera : Cercopidae) in central Brazil

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Introduction The beef cattle industry in tropical America, with its extensive production systems, depends on forage grasses for meat production. Several species of the genus *Brachiaria* comprise the most important of these grasses. Because of their excellent adaptation, particularly of *B. decumbens* to low-fertility acid soils, they have been widely adopted throughout Central and South America. The extensive monoculture of *B. decumbens*, however, has favored the buildup of several spittlebug species, the most damaging pests of *Brachiaria* in tropical America. These insects can drastically reduce plant growth, dry matter production as well as forage quality (Valério et al., 2001). A great effort has been devoted to finding grasses resistant to spittlebugs. The objective of the present work was to evaluate 28 hybrids of the genus *Brachiaria*, from the germplasm available at Embrapa Beef Cattle Research Center, for resistance to the spittlebug *Notozulia entreriana* using the selection criteria of nymphal survival and nymphal period.

Material and method The assay was conducted in the greenhouse (T=28.0±2.2°C and RH=71.7±8.8%) using methodology described by Lapointe et al. (1989). The hybrids were initially established in a hydroponic system (a minor modification in the original methodology), then planted in small plastic cups and, posteriorly transferred to 17 cm diameter plastic pots. Each of these pots were covered with aluminum tops, which have a central opening for the grass stems. This is done in order to stimulate abundant superficial rooting at the soil surface and hence provide enough seeding sites for the newly hatched nymphs. The plants were infested two and half months after planting with five eggs [obtained according to Valério (1993)] per pot. There were ten replications for each hybrid in a complete randomized assay. Close to adult emergence, the pots were individually caged. The emerging adults were collected daily. As screening criterium, only the hybrids presenting, simultaneously, percentage of nymphal survival below the average for the group, minus the correspondent standard deviation and, nymphal period above the average for the group plus the respective standard deviation, were selected as resistant. *B. decumbens* cv. Basilisk was included as the susceptible check whereas *B. brizantha* cv. Marandu, as the resistant one.

Results and discussion The survival rates varied from 12% to 96%, the average being 76±15.6% for the group. For nymphal period, the variation was from 26.9 to 37.5 days, with an average of 30.6±2.3 days. In accordance with adopted screening criterium, two hybrids (HB331 and HB336) were selected as more resistant in this trial. The nymphal survival for these hybrids were, respectively, 12% and 48.9%; whereas the duration of the nymphal period were, respectively, 37.5 and 33.7 days. Presumably the resistance exhibited by these plants is due to secondary chemicals, being still necessary, additional studies to fully understand the basis of this resistance. All the remainder evaluated hybrids provided high nymphal survivorship (79.2±7.5%), showing, therefore, suitability as host plant to this spittlebug species.

Conclusions Two *Brachiaria* hybrids were selected as resistant to the pasture spittlebug *Notozulia entreriana* through the mechanism of resistance termed antibiosis, impairing development and survival of the nymph. Aiming to release new spittlebug resistant *Brachiaria* cultivars, however, both hybrids should also be evaluated with sugarcane spittlebugs of the genus *Mahanarva* (serious threat to forage grass in Northern Brazil), additionally to complementary agronomic evaluations in multi-location trials in distinct ecosystems of the country.

References

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