Sorting *Brachiaria* hybrids as to resistance to the pasture spittlebug *Deois flavopicta* (Hemiptera: Cercopidae)

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The beef cattle industry in tropical America largely 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. Chemical control, widely used in high-value crops, is too costly and seldom used for pastures in Brazil. Efforts have been directed toward developing effective low-cost control measures that farmers can easily adopt, such as spittlebug-resistant cultivars. The objective of the present work was to evaluate hybrids of the genus *Brachiaria*, from the germplasm available at Embrapa Beef Cattle Research Center, for resistance to the forage spittlebug *Deois flavopicta* using the selection criteria of nymphal survival and nymphal period. The assay was conducted in the greenhouse. Twenty six hybrids were initially established in a hydroponic system, then planted in small plastic cups and, posteriorly transferred to 17 cm diameter plastic pots. Each of these pots was 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 feeding sites for the newly hatched nymphs. The plants were infested two and half months after planting with five eggs 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. The survival rates varied from 4 to 90%, the average being 71.6 ± 17.9% for the group. For nymphal period, the variation was from 29.9 to 39.5 days, with an average of 31.6 ± 1.8 days. In accordance with the adopted screening criterium, only one hybrid (code H1) was selected as more resistant in this trial. The nymphal survival for this hybrid was 4%; whereas the duration of the nymphal period was 39.5 days. Presumably the resistance exhibited by this plant 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 (75.1 ± 10.5%), showing, therefore, suitableness as host plant to this spittlebug species. Therefore, one *Brachiaria* hybrid was selected as resistant to the pasture spittlebug *D. flavopicta* through the mechanism of resistance termed antibiosis, impairing development and survival of the nymph. Aiming to release new spittlebug resistant *Brachiaria* cultivars, however, such hybrid should also be evaluated with 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.

Keywords: antibiosis, forage grass, froghopper, host plant resistance, pasture pests

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