Abstract
The aim was to compare yield of dry matter (RMS) and quality of grain and foliage sorghum varieties with and without brown midrib (bmr), by using plants with average concentrations of 300 g kg⁻¹ of DM. Three grain (Solarius, Aralba and Topsilo) and three forage (Sweet Virginia, Big Kauna and Sucrosorgho) varieties were studied. Sweet Virginia and Big Kahuna contain bmr gene. RMS varied from 11.10 t, of Topsilo, to 17.12 t ha⁻¹ of Sweet Virginia, related with plant height and stem/plant proportion. Topsilo had greater number of sprouts (1.5 m⁻¹). Relationship panicle/plant was similar between varieties. Number of plants m⁻¹ had variation between varieties but did not affect RMS. Protein concentration was from 75.45 g kg⁻¹DM in Big Kahuna, up to 104.3 g kg⁻¹ DM in Solarius, and had inverse relationship with RMS, with plant height and with stem/plant ratio. Varieties with greater protein concentration (Solarius, Aralba and Topsilo), showed least RMS, lower height and lower ratio stem/plant. Foliar area per plant was source of protein variation between grain varieties. Digestibility ranged from 596 g kg⁻¹ DM in Aralba, up to 720.4 g kg⁻¹ DM in Sweet Virginia, and was related with lignin concentration. This last variety with Big Kahuna and Solaris were the best in digestibility. The high digestibility from Solarius (not bmr carrier) was because its low stem/plant ratio (0.35). Sweet Virginia variety is an important option in animal food since its high RMS and digestibility Solaris had low RMS, but is useful for high consumption of digestible dry matter (dairy cows), also has better protein concentration.

Keywords
Sorghum bicolor, digestibility, protein, dry matter yield.