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Determination of nutritional value of different varieties of forage sorghum in Alborz province

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Abstract

This study was conducted to determine and compare the chemical and metabolizable energy of 18 forage sorghum cultivars and to introduce the superior cultivar. Trial varieties were harvested in two growth stages (two cut). The first harvest stage was in the flowering stage, and the second phase was seventy days after frist cut. In the experimental cultivars, nutrient components including crude protein, crude ash, ADF, NDF, water-soluble carbohydrates, starch and lignin were determined. The digestibility of the samples was determined by gas test method. Using the amount of produced gas at 24 hours and the amount of crude protein, the metabolizable energy of sorghum varieties was determined. The cultivars were compared and ranked in a completely randomized way for metabolizable energy per hectare. Resulted showed that all measured traits and metabolic energy in frist cut were lower than second one. However, in the first cut, in terms of the amount of metabolic energy, of Juicy Sweet BMR SSH.1, which was a midrib variety, was, ranked first with 2.48 mega calories per kg of dry matter, but FGCSI12 produced 38497 megacalres per hectare. FS one BMR, which is a BMR variety, produced the lowest yield of 16225 megacalries per hectare in frist cut. In second cut, The Siloking cultivar produced 48179 megacalries per hectare, and FS One BMR, which is a BMR cultivar, produced the lowest yield of 22,283 megacalries per hectare.Overall, the results showed that none of the domestic cultivars was of superiority in quantitative and qualitative terms. The top three of first cut were FGCSI12, Siloking and Juicy sweet2, and in second cut were Siloking, FGCSI12 and Titan.

Keywords: forage sorghum, chemical composition and gas test