

CHEMICAL CHARACTERIZATION OF TEN DUAL PURPOSE SORGHUM VARIETIES FOR ANIMAL FEED IN ARID AND SEMI-ARID AREAS OF KENYA.

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Abstract (A2071)

A study was designed to evaluate ten dual purpose sorghum varieties (NGUUGU, MACIA, BTX623, IESV91131DL, IESV92089DL, IESV92165DL, IESV99006 DL, IESV99026DL, IESV99095DL and SDSL90162-2) for nutritional performance with view to recommend the best suited for animal feed in arid and semi-arid areas. The trial was conducted at KARI Kiboko, Machang'a and Kambi ya Mawe. The categorization into dual purpose was based mostly on biomass yield, grain yield and overall agronomic expression. At the age of 14 weeks, destructive sampling was conducted to obtain samples for chemical composition evaluation. The samples were separated into panicles, leaves, stems and whole plant. They were analyzed for DM, CP, NDF, ADF, ADL and Hemicellulose. DM content of the ten sorghum varieties ranged from 91.2 to 92.57%, while CP was in the range of 5.13 - 6.61%. The NDF was highest ($P \leq 0.05$) in Nguugu (73.79%) and lowest in IESV99006 DL (58.52%). The ADF content followed the same pattern with Nguugu showing the highest ($P \leq 0.05$) value (34.23%) and IESV99006 DL with the lowest value (23.94%). The hemicellulose and ADL contents were similar with values of 33.85 - 39.56% and 4.55 - 5.8%, respectively. Plant parts, the leaves had higher ($P \leq 0.05$) DM content (92.34%) than panicles (91.71%) and stems (91.28%). The panicle showed the highest ($P \leq 0.05$) CP content (7.07%) while stem had lowest value (3.92%). The NDF values obtained were highest ($P \leq 0.05$) for stems (70.68%) and lowest in panicles (60.25%). The ADF, Hemicellulose and ADL showed higher ($P \leq 0.05$) values in leaves and stems and lower values in panicles. A combination of ability to produce relatively higher dry matter digestibility, crude protein and low fibre constituents, in addition to biomass yield leads to ranking variety IESV99006DL and IESV92165DL as top for dual purpose production.

Key words: Nutritional evaluation, Plant parts, sorghum, varieties, Kenya