

Yield and nutritive value of heading and headless sorghum×sudangrass hybrids in response to cutting frequency

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Introduction Summer annual forages contribute greatly toward solving the problem of roughage supply for cattle in Korea. These forages support high levels of dairy and beef production during hot summer months when the quality and production of perennial herbage decreases due to unfavourable climatic conditions (Olson, 1971). This study investigated the effects of cutting frequency on dry matter (DM) yield and nutritive value of heading versus headless varieties of sorghum×sudangrass hybrid.

Materials and methods Heading (cv. ‘T. E. Haygrazer’) and headless (cv. ‘Jumbo’) sorghum×sudangrasses were established on 27 May, 1999. Fertiliser applications (N 210 and K 150 kg/ha) were distributed equally across establishment and all but final harvest dates; P (150 kg ha) was applied at establishment only. The forages were cut 1, 2, or 3 times/year. Estimates of yield were determined by harvesting all forage in each plot. Fresh forage was oven-dried for 72 h at 75°C, weighed and converted to DM yield. Forage nutritive value was evaluated by ADF and NDF (Goering & Van Soest, 1970), and *in vitro* dry matter disappearance (IVDMD; Moore, 1970). Heading type was the main plot and cutting frequencies were sub plots.

Results DM yields of heading vs. headless types of sorghum×sudangrass hybrids (7,687 vs. 9,857 kg/ha, respectively) did not differ significantly (Table 1). For both types, DM yields for multiple-cut treatments were highest at Cut 1. The low yields at Cut 3 of the 3× cutting treatment were likely due to the short growing period. Concentrations of ADF and NDF were slightly greater in the headless type sorghum×sudangrass. Levels of ADF were highest at Cut 1 for both varieties. Levels of NDF were highest at Cut 1 in the headless type, but highest at Cut 2 in the heading type. IVDMD was numerically greater in the headless variety than in the heading type and was numerically greatest in Cut 2 for both varieties but differences among harvest treatments were not significant.

Table 1 Dry matter (DM) yield of sorghum×sudangrass hybrid

Treatments		DM yield (kg/ha) per cut			
Type	Cutting frequency	1st	2nd	3rd	Total
Heading	1×	9,130			9,130
	2×	6,670	1,010		7,680
	3×	4,890	1,000	360	6,250
	Mean				7,687
Headless	1×	13,420			13,420
	2×	7,340	1,330		8,670
	3×	4,800	1,850	830	7,480
	Mean				9,857
LSD (0.05)	Heading Type (A)				NS
	Cutting frequency (B)				NS
	A×B				NS

NS: not significant

Conclusions Although there were no significant yield differences, cultivation of headless types with one annual harvest is satisfactory. Headless sorghum × sudangrass hybrids can produce high levels of dry matter with very good nutritive value for summer forage in Korea.

References

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