

A Note on Hydrocyanic Acid (HCN) Content in New Varieties of Fodder *Sorghum vulgare* Pers. (Jowar)

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Hydrocyanic acid is most toxic and is rapidly liberated under the actions of ruminal micro organisms (Coop and Blakely 1948-49). Ruminants are more susceptible to poisoning by cyanogenetic plants than horses and pigs, since the enzymes concerned in the release of HCN are destroyed by gastric hydrochloric acid (Clarke and Clarke, 1977). Generally the hybrids of Johnson grass (*Sorghum halepense*), Sudan grass (*S. sudanese*) and Sorghum (*S. vulgare*) are more toxic than the pure species (Blood and Henderson 1963).

Four samples of each of the fodder varieties of *Sorghum vulgare* Pers. (jowar) I.S. 3306, I.S. 5026, J-S-3, C-10-2 and S-1049 under trial were received from Plant Breeding Research Station, Anand Centre. These were tested quantitatively for HCN content by the method described by Randhir Singh and Pradhan (1976) at seedling (one month after sowing) and at flowering stage. For the expression of HCN values on dry matter basis the dry matter contents in all the samples were also determined. Average HCN content (mg/100 g dry matter) for all the varieties at seedling and flowering stages of harvest are presented in Table-1.

TABLE 1

HCN content in different varieties of jowar (fodder samples). @

Jowar Variety	HCN content (mg/100g on D.M. Basis)	
	10-10-80	13-11-80
	One month stage (morning cut)	Flowering stage (morning cut)
I-S-3306	30.49	10.30
I-S-5026	71.00	63.33 (12.28)*
J-S-3	75.86	23.54
C-10-2	30.59	20.65
S-1049	5.28	5.17

@Average of 4 samples.

* Flowering was late and hence values were determined on 29-11-80.

From the results given in Table-1 it is apparent that the HCN content ranged from 5.28 (S-1049) to 75.86 (J-S-3) mg/100 g on dry matter basis when harvested at one month stage. The values are potentially dangerous in all the varieties except S-1049. At flowering stage, the values ranged from 5.17 to 23.54 mg/100 g. on dry matter basis. The plant material containing HCN 20 mg/100 g or above is potentially toxic and dangerous to animal (Blood and Henderson, 1963). Therefore, varieties J-S-3 and C-10-2 are above the threshold. Thus *S. vulgare* (jowar) fodder varieties should be checked quantitatively for HCN content.

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