Quality Assessment of Multicut Forage Sorghum (COFS-29) in Karimnagar District, Telangana

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MINI ABSTRACT: This study aimed to assess the nutritional quality of the multi-cut fodder sorghum (COFS-29) in field conditions, in the Mulukanoor region, Karimnagar district, for one year. Forage samples of multi cuts were collected from 29 farmers of 16 villages where COFS-29 adoption was high. The average CP and IVOMD was 8.7% and 47%with no difference in sorghum fodder of multicuts.
Keywords: *In vitro* digestibility, Multi-cut fodder sorghum (COFS-29)

BACKGROUND

The Mulukanoor Women's Co-operative Dairy (MWCD) has more than 25,000 members from 150 villages. Feed scarcity and feeding cost are major constraints for great benefits from small holder dairy enterprises. Over the past two years, the International Livestock Research Institute (ILRI) introduced high yielding sorghum forage, COFS-29, in the MWCD to improve dairy productivity and decrease productioncosts. This study aimed to determine the yield and nutritional quality of COFS-29 at different cutting frequencies. Correlation between yield and nutritional qualities was also explored.

METHODOLOGY

The study was performed across16 villages where COFS-29 adoption was high. Forage samples were collected from 29 farmers over seven cuts in one year. Following collection, fresh and dry matter weight were recordedand the samples were sent to ILRI, Patancheru, Hyderabad. Samples were analyzed for various parameters including crude protein (CP), fibre fractions (NDF and ADF), metabolizable energy (ME) and *in vitro* organicmatter digestibility (IVOMD) by Near Infrared Reflectance Spectroscopy (NIRS) on a FOSS Forage Analyzer XDS, using specifically developed calibrations. Relationships between the yield and quality parameters were tested through a correlation analysis using the Statistical Analysis Systems (SAS) (PROC CORR) procedure in SAS 9.4

RESULTS

Farmers reported that COFS-29 was better than other forage varietie sin terms of animal intake and ease of management (cutting) due to fewer spikelets on the leaves resulting in less rejection by the animals while feeding. Total fresh weight harvested for one year was 318 tons/ hectare with dry matter of around 24% (Table 1). Biomass yields increased after each cut, except for the fifth and sixth cuts which were during the summer season. Farmers practices were following the principal of a first cut followed by 76 days with succeeding cuts at 47-50 days. Nutritional investigation of the forage samples revealed an average CP of 8.7% and IVOMD of 47% (Table 1). No significant correlations between yield and quality parameters were detected ($P<0.05$). Although the quality of COFS-29 is low a positive production response is found following its higher inclusion in the feeding strategy of dairy cooperative members.

Table 1. Nutritional quality parameters of COFS-29 for agesorghum

Cut No.	Days	CP (%)	NDF (%)	ADF (%)	ADL (%)	ME (MJ/kg)	IVOMD (%)	Dry Forage Yield (tons/ha)
1st cut	76	8.23	69.1	45.6	5.8	6.1	44.0	6.37
2nd cut	50	8.32	67.6	42.7	5.1	7.1	49.9	6.53
3rd cut	48	8.76	68.1	43.9	5.4	6.7	47.9	7.49
4th cut	47	8.07	70.1	46.4	5.6	6.5	46.5	8.35
5th cut	48	9.3	67.9	43.0	5.4	6.6	47.4	8.18
6th cut	48	8.84	68.0	41.9	5.6	6.4	45.4	7.82
7th cut	48	9.29	67.1	40.5	5.4	6.7	47.6	8.73
Mean		8.69	68.3	43.4	5.5	6.6	46.9	7.64

CONCLUSION

Based on these results, multi-cut sorghum fodder COSF 29 was demonstrated to be one of the best options to feed dairy animals since it produces high biomass yields.