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Theme 4. Biodiversity, conservation and genetic improvement of range and forage species**Sub-theme 4.1.** Plant genetic resources and crop improvement**Performance of Guinea grass variety JHGG-08-1 in southern region of Karnataka****M. R. Krishnappa***, B. G. Shekara, H. C. Lohithaswa, N. M. Chikkarugi, N. Manasa

AICRP on Forage crops, Zonal Agricultural Research Station, V.C Farm, Mandya, UAS, Bengaluru, India

*Corresponding author e-mail: krishnappa_93@yahoo.co.in**Keywords:** Crude protein yield, Dry matter, Green forage yield, Guinea grass**Introduction**

Guinea grass (*Panicum maximum*) is native to Africa but this grass was introduced to almost all tropical countries as a source of animal forage. It grows well on a wide variety of well drained soils of good fertility and it is suitable for vegetative barrier and conservation of soil. It can survive quick moving fires which does not harm the underground roots and drought because of the deep, dense and fibrous root system. The Potentiality of the varieties varies with agro climatic situation and soil type. Keeping these things in view, the present investigation was taken up to study the performance of Guinea grass varieties in southern dry zone of Karnataka under protective irrigation.

Materials and Methods

A field experiment was conducted during kharif seasons of 2009, 2010 and 2011 at Zonal Agricultural Research Station, Vishweshwaraiah Canal Farm, Mandya (Karnataka) to study the performance of Guinea grass varieties in southern dry zone of Karnataka. The experiment consisted of eight varieties viz., JHGG-08-1, RSDGG-2, JHGG-08-2, PGG-710, PGG-702, PGG-729, PGG-616 which was compared with National check Riversdale and Bundel Guinea-1. The experiment was laid out in randomized complete block design with three replications.

Results and Discussion

Pooled data of three years indicated that Guinea grass variety JHGG-08-1 recorded significantly higher green forage yield (1007.04 q/ha), dry matter yield (147.72 q/ha) and Crude Protein yield (12.99 q/ha) as compared to the check Riversdale, which recorded green fodder yield (668.83 q/ha), dry matter yield (100.47 q/ha) and Crude Protein yield (10.38 q/ha).

Significantly higher plant height (78.47 cm) and leaf: stem ratio (0.71) was observed in Guinea grass variety JHGG-08-1 as compared to check variety Riversdale (50.24 cm and 0.55 respectively). The same variety recorded additional net returns of 25363/- Rs/ha with B: C ratio of 2.97 and higher IVDMD (85.40%) over check

Table 1: Performance of Guinea grass varieties in southern region of Karnataka (Mean of three years)

Entries	Green forage yield (q/ha)	Dry matter yield (q/ha)	Crude protein yield (q/ha)	Plant height (cm)	Leaf: stem ratio
JHGG-08-1	1007.04	147.72	12.99	78.47	0.71
RSDGG-2	851.94	133.45	11.34	60.64	0.70
JHGG-08-2	722.02	114.47	11.18	61.62	0.64
PGG-710	396.08	71.90	7.04	58.51	0.57
PGG-702	454.53	72.42	7.21	59.24	0.58
PGG-729	425.43	67.48	6.02	57.58	0.66
Riversdale (NC)	668.83	100.47	10.38	50.24	0.55
PGG-616 (NC)	498.01	78.00	6.78	61.42	0.49
Bundel Guinea-1 (NC)	617.32	99.91	9.27	61.96	0.48
Mean	634.20	98.42	9.13	61.07	0.60
S.Em+	26.56	6.06	0.84	3.98	0.03
CD @ 5%	81.61	18.17	2.08	11.94	0.11
CV%	7.14	10.35	16.60	10.83	10.41

Table 2: Economics and quality parameters of Guinea grass variety JHGG-08-1

Varieties	GFY (q/ha)	Gross returns (Rs/ha)	Net returns Rs/ha	Additional net returns Rs/ha	B :C ratio	ADF (%)	NDF (%)	IVDMD (%)
JHGG-08-1	1007.04	75525	50165	25363	2.97	43.80	75.20	85.40
Riversdale (Check)	668.83	50162	24802	-	1.98	51.00	75.30	81.00

Conclusion

Based on the present study it can be inferred that Guinea grass variety JHGG-08-1 can be recommended for southern dry zone of Karnataka which recorded the superior green forage yield, dry matter yield, crude protein yield and better leaf: stem ratio over local check Riversdale.

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