



A REVIEW

Comparison of yield and quality parameters of different napier bajra hybrid varieties

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Abstract : Several napierbajra varieties are cultivating different parts of country. The present review is aimed to find out suitable bajra napier varieties for different locations and also compare the yield, quality and nutrient composition of varieties. Most of the researchers concluded that the high yielding varieties in Napierbajra hybrid were BNH-10, DHN-6, TNCH-1280, PBN-233 and CO (BN) 5 for different locations. Average crude protein content higher in varieties of CO-3 and BNH-10.

Key Words : Napierbajra hybrid varieties, Yield, Crude protein

View Point Article : Aruna, P., Praveen Raj, M. and Triveni, B. (2024). Comparison of yield and quality parameters of different napierbajra hybrid varieties. *Internat. J. agric. Sci.*, **20** (1) : 311-314, DOI:10.15740/HAS/IJAS/20.1/311-314. Copyright@2024: Hind Agri-Horticultural Society.

Article History : Received : 22.08.2023; Accepted : 15.09.2023

INTRODUCTION

Among various fodder crops napier bajra hybrid is most important under irrigated areas of different states. In Andhra Pradesh 90-95 % of dairy farmers depends on napier bajra hybrids for feeding their livestock. The more popularity of napierbajra hybrids due to its perennial, high yielding ability, faster growth, insect pest and disease resistance, drought tolerant and high nutrient content. In recent past many institutions released different high yielding napierbajra varieties and became very popular in site specific areas. Rahman and Talukder (2015) stated that once establishment of napier bajra hybrid it continues to supplies green fodder at least for 5 years. Pandey and Roy (2011) stated that among all fodder crops napierbajra hybrid is multicut perennial grass with profuse

tillering and high tonnage of green fodder throughout the year.

Biometric observations :

Plant height, leaf stem ratio and drymatter production were higher in BNH-10 as compared to the local variety co-3 and it was on par with PNB-233 (Sashikanth *et al.*, 2013)

Biradar *et al.* (2014) stated that DHN-6 hybrid napier variety recorded more number of tillers (34). However it was on par with APBN-1 variety (27) and samurudhi variety (29) of guinea grass.

Dahipahle *et al.* (2015) stated that plant height (111.64 cm) and leaf stem ratio (0.76) were higher in BNH-10 variety of napierbajra hybrid than local variety of CO-3 (80.39 cm of plant height and 0.64 leaf stem

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ratio) but it was on par with PNB-233 variety (107.33 cm plant height and 0.72 leaf stem ratio).

Yield parameters :

Dahipahle *et al.* (2015) reported that BNH-10 variety of napierbajra hybrid recorded higher values of growth parameters, green forage yield, dry matter yield and crude protein content than CO-3 local variety in north Konkan zone of Maharashtra.

Digvijay Singh and Garg (2015) stated that at National Dairy Development Board, Anand and Gujarat BNH-10 variety of bajra hybrid recorded the highest green fodder yield (94.2 t/ha) than CO-4 and IGFRI-6. However it was on par with DHN-6, PBN-233 and local checks of APBN-1 and CO-3.

Ramya *et al.* (2017) stated that bajra Napier Hybrid CO (BN) 5 was recorded the higher values of yield, leaf:stem ratio than CO (BN)4 and CO-FS-29 of sorghum.

In irrigated conditions of southern districts of Tamil Nadu best suitable variety is KKM-1 compare other varieties (Das *et al.*,2000).

Hossain *et al.* (2017) stated that cultivation of high yielding DHN-6 hybrid facilitate to reduce the gap between demand and availability of green fodder.

Saurabh Sharma *et al.* (2019) revealed that DHN-6 hybrid napier variety produced the higher green fodder yield than bundle guinea-1 and bundle guinea-2 of guinea grass varieties.

Babu *et al.* (2014) stated that compare to the CO-3 variety of hybrid napier (2960 q/ha/yr) TNCN074

recorded the higher green fodder yield (3260 q/ha/yr).

Many Researchers (Premaratne and Premalal, 2006, Chellamuthu *et al.*, 2011 and Raj and Palled, 2014) were stated that CO-3 napier hybrid produced higher green and dry fodder yield.

Tiwana *et al.* (2004) stated that at Punjab Agricultural University, Ludhiana the Napier bajra variety of PBN-233 recorded 12.4% higher green fodder yield and 14% more dry matter yield than already existed PBN-83 variety

Wangchuk *et al.* (2015) reported that super napier (Pakchong-1) having higher stem and dry matter production may be advantages of more biomass production.

Shashikanth *et al.* (2013) stated that BNH-10 hybrid napier variety recorded the significantly higher green fodder yield (1431.4 q/ha) than existed CO-3 variety but it was on par with PNB-233

Quality parameters :

Savitha Antony and George Thomas (2014) revealed that CO-3 napier variety was contain higher crude protein content in leaves than CO-2, CO-4, KKM-1, Suguna, Supriya, IGFRI-7, IGFRI-3 and DHN-6

CO-3 variety of hybrid napierbajra contain the average crude protein content 10.5% revealed by Vijayakumar *et al.* (2009).

Kadam *et al.* (2016) stated that CO-4 (11.36), DHN-6 (10.63) and CO-3 (9.86) contain higher crude protein content under heavy rainfall conditions of Goregaon place of Maharashtra.

Table 1: Yield potential of various bajra Napier hybrids at different locations

Sr. No.	Suitable variety	Location	Author	Yield particulars	Year of research
1.	BNH-10	North Konkan zone of Madhya Pradesh	A.V. Dahipahle <i>et al.</i>	1431.4 q/ha	2012-2013
2.	BNH-10	Anand, Gujarat	Digvijay Singh and A.K.Garg	94.2 t/ha	2013-14 and 2014-15
3.	CO-3	Kerala	Savitha Antony and C.George Thomas	-	2011-2012
4.	TNCH 1280	AICRP trails at north western zones	C. Babu <i>et al.</i>	81.2 t/ha	2016-2018
5.	DHN-6	Maharasta	Saurab Sharma <i>et al.</i>	88.7 and 93.5 t/ha	2015-2016 2016-2017
6.	BNH-10	Mandya, Karnataka	Shashikanth <i>et al.</i>	1431.4 q/ha	2009-2011
7.	DHN-6	Raichur, Karnataka	Biradar <i>et al.</i>	710 q/ha	2010-2011 and 2011-12
8.	CO (BN)5	Namakkal, Tamil Nadu	Ramaya <i>et al.</i>	467.5 t/ha	2015-2016
9.	CO (BN) 5	Babu <i>et al.</i>	All India trails in 11 locations	18.32 q/ha/yr	2005

Sashikanth *et al.* (2013) revealed that BNH-10 variety of hybrid napierbajra contained higher crude protein yield (18.41 q/ha) as compared to local variety CO-3 and it was on par with variety TNCN-07-2 (17.15 t/ha).

Jamaswat *et al.* (2019) revealed that after the chemical analysis of super napier it contain 1.21% crude protein, 10.12% crude fat, 10.2% NDF and 85.09 moisture on fresh weight basis.

Suguna variety of bajra Napier contain highest oxalate content and lowest in CO-4 among the CO-2, CO-3, KKM-1, Supriya, IGFRI-3, IGFRI-7, DHN-6 and PBN-16 varieties (Savitha Antony and George Thomas, 2014).

Savitha Antony and George Thomas (2014) stated that compare to CO-2, CO-3, CO-4, IGFRI-3, DHN-6, PBN-16 the variety IGFRI-7 has recored the highest crude fibre in both leaves and stems.

REFERENCES

- Babu, C., Iyanar, K. and Kalamani, A. (2014).** High green fodder yielding new grass varieties. *Electronic Journal of Plant Breeding*, **5** : 220-229.
- Biradar, S.A., Shreedhar, J.N. and Ubhale, P. (2014).** Economics and varietal performance of Hybrid napier and Guinea grass under irrigated conditions of northern Karnataka. *Forage Research*, **40** (2) : 95-97.
- Chellamuthu, V., Saravanane, P. and George Paradis (2011).** Evaluation of bajra napier hybrid grass cultivars under coastal eco system of Karaikal, Punducherry Union Territory. *Madras Agricultural Journal*, **98** (7-9) : 253-254.
- Dahipahle, A.V., Bhagat, S.B., Shinde, B.D, Mahadkar, U.V and Gangawane, S.B. (2015).** Performance of bajra napier hybrid varieties in north Konkan Zone of Maharashtra. The XXIII International grassland congress (Sustainable use of Grassland Resources for forage production, Biodiversity and Environmental Protection) took place in New Delhi, India from November 20 through November 24.
- Das, V., Thirumeni, L.D., Kandasamy, S., Rajavindran, G. and Vivekanandan, P. (2000).** KKM1: A new high yielding cumbu napier hybrid grass for southern districts of Tamil Nadu. *Madras Agricultural Journal*, **87** (10-12): 632-634.
- Singh, Digvijay and Garg, A.K. (2015).** Herbage yield, quality and nutrients composition of bajra Napier (BN) hybrid grass varieties under central Gujarat condition The XXIII International grassland congress (Sustainable use of Grassland Resources for forage production, Biodiversity and Environmental Protection) took place in New Delhi, India.
- Sherasia, P. L., Hossain, A. S., Phondba, B., Pathan, F., & Garg, M. R. (2017).** Effect of feeding green fodder based diet in lactating buffaloes: Milk production, economics and methane emission. *Indian Journal of Dairy Science*, **70**(6), Retrieved from <https://epubs.icar.org.in/index.php/IJDS/article/view/70997>.
- Jamaswat, V., Langco, N.C., Reyes, J.L., Gaffud, D.M., Pascua E.M. and Seatung, C. (2019).** Study on chemical composition of super napier grass silage treated with *Lactobacillus Buchneri* and *Lactobacillus Plantarum*. *Journal of Mycology Sciencies*, **2** (2) : 000109.
- Kadam, S.S., Baig, M.I., Karambale, N.R. and Kodape, A.H. (2016).** Comparative performance of different varieties of hybrid napier and other perennial grasses under heavy rainfall region. *Progressive Research-An International Journal*, **11** (2): 1054-1055.
- Pandey, S. H. and Roy, A.K. (2011).** *Forage crops varieties*. IGFRI, Jhansi. pp.25-27.
- Premaratne, S. and Premalal, G.G.C. (2006).** Hybrid napier (*Pennisetum purpureum* × *Pennisetum americanum*) Var.CO-3 : A resourceful fodder grass for dairy development in Sri Lanka. *The Journal of Agricultural Sciences*, **2** (1) : 24-32.
- Rahman, M.Z. and Talukder, M.A.I. (2015).** Production and nutritional quality of high yielding fodders in the coastal areas for ruminants. *The Agriculturist*, **13**(1):1-8.
- Raj, Vinay, D. J. and Palled, Y.B. (2014).** Response of hybrid napier genotypes to nitrogen levels. *Karnataka Journal of Agricultural Sciences*, **27** (1) : 74-75.
- Ramya, S., Ramesh, V., Muralidharan, J. and Purushothaman (2017).** Fodder yield and chemical composition of hybrid napier and multi-cut sorghum fodder at stages of cutting. *Indian Journal of Small Ruminants*, **23** (2) : 181-185.
- Sharma, Saurabh, Korake, Ravindra, Bharad, Rohini and Singh, Ravindra (2019).** Effect of climate change on production of hybrid napier (DHN-6) grass on milk yield. *Journal of Pharmacognosy and Phytochemistry*, **8** (4) : 3064-3066.
- Antony, Savitha and George Thomas, C. (2014).** Nutrient quality of hybrid napier cultivars grown under rainfed ecosystem. *Journal of Tropical Agriculture*, **1** : 90-93.
- Shashikanth, V.S., Somashekhar, K.S, Shekara, G. and Krishnappa, M.R. (2013).** Performance of bajra napier hybrid varieties in southern dry zone of Karnataka for the Kharif season of different years. *Forage Research*, **39** (2): 64-66.
- Tiwana, M.S., Puri, K.P., Tiwana, U.S. and Singh, A. (2004).** Forage production potential of napierbajra hybrid varieties under different nitrogen levels. *Forage Research*, **30** (2) : 83-85.

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Vijayakumar, G., Babu, C., Velayudham, K. and Raveendran, T. S. (2009). A high yielding cumbu napier hybrid grass CO (CN) 4. *Madras Agricultural Journal*, **96** (7-12) : 291-292.

Wangchuk, K., Rai, K., Nirola, Harilal, Dendup, C., Thukten

and Durba, M. (2015). Forage growth, yield and quality response of Napier hybrid grass cultivars to three cutting intervals in the Himalayan foothills. *Tropical Grasslands-Forrajes Tropicales*, **3**: 142-150.

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