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Super Napier as a perennial fodder availability to milch animals

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Abstract

The present study (Front Line Demonstration) was conducted in promotion of the super Napier fodder as a perennial multi-cut fodder variety which aided in year-round fodder availability to the milch animals. The demonstration has been carried out by selecting 10 farmers from the KVK adopted villages for the period of 3 years i.e. 2020-2023 where each farmer was distributed with 10,000 no. super Napier fodder slips for cultivation. The demonstration resulted in benefiting the farmers with an additional source of income generation of 30,000/-(4 farmers), 25,000/-(3 farmers) & 20,000 (3 farmers) by the sale of the slips in addition to the extension of the fodder area cultivation for feeding to animals. The study also depicted with the production of good quality and quantity of milk and maintenance of good animal health conditions by feeding of super Napier in the treatment group when compared to the control group where routine feeding practice was with locally available fodder Jowar (CSH-31) to milch animals.

Keywords: Front line demonstration, perennial, palatability & milk productivity

1. Introduction

As the Livestock population continues to grow, the demand for feed and fodder has been increasing to meet the economically viable dairy enterprise. In India, dairy farming is one of the independent enterprises that provides regular income to farmers either by sale of milk or its by-products as an alternate source of income especially during crop damage incurred with extreme environment changes leading to drought and flood. However, success in the dairy sector depends on the feeding of quality feed & fodder of high nutritional value which accounts for 70% of the expenses of animal feed Kumar *et al.* (2012) [11]. The most challenging key faced by farmers is the deficit/steady supply of high-quality fodder for milch animals. The crisis for fodder in Indian conditions is due to the limited availability of land for fodder cultivation and it was reported with a shortage of 61.1 & 21.95 of green & dry fodder respectively (IGFRI 2011) [9]. The Majority of farmers feed the animals on crop residues & poor quality fodder which accounts for around 97% and feeding animals with these poor-quality fodder causes ill health to animals & a decline in productivity Hegde (2012) [7], Aher *et al.* (2003) [2]. Here comes the solution for high-yielding fodder variety i.e. super Napier with an average biomass of 500 tonnes per hectare & resistant to pests & diseases. The first harvest of the super Napier fodder is at 60 days after which every cut is made with a gap of 45-60 days. The average number of harvests recorded is about 8 per year. Super Napier fodder has good nutritive value and the short intervals of the harvest are to feed at an early stage as the nutritive value depends on harvest intervals. Hybrid Napier is one among the fodder varieties that is widespread with perennial multi-cut nature & yields more biomass per year and profuse tillage Pandey & Roy (2011) [14]. The preservation of Napier fodder by silage results in high palatability and good aroma Kung & Shaver (2002) [12], by the production of lactic acid, Acetic acid, and butyric acid during the fermentation process Miyagi *et al.* (1993) [13], replacing the deficit of green fodder, especially during droughts. As per Hatam *et al.* (2001) [6] the performance regarding the production of good quantity & quality milk relies on the feeding of green fodder at various intervals during the year.

Most of the forage crops are nutritious but seasonal by which shortage of fodder is noticed and the adaptability of grasses to all types of climatic conditions & soils is more compared to forage trees February and Higgins (2010) [5].

2. Methodology

The super Napier slips of 10,000 no. were initially procured from fodder seed multiplication farm (FSMF), Reddipalli, Animal husbandry department. These were initially cultivated in 1 acre of land at Krishi Vigyan Kendra farm, Reddipalli which were further extended to 4 acres of land and distributed to selected farmers under FLD trial. A total of 10,000 no slips to each farmer constituting 1 Lakh super Napier slips were distributed to 10 selected beneficiaries from KVK, Adopted villages. Prior to distribution & cultivation, farmers were given awareness programs & demonstrations to promote the utilization of super Napier fodder for milch animals feeding. The demonstration was conducted by pulverizing the soil before cultivation and the slips were planted in a slant

direction by allowing a 2 ft distance apart between two slips & 3 ft distance between each row. The study was carried out for a period of 3 years from June 2020 to May 2023 and the data was collected and analyzed Statistically Snedecor & Cochran (1994).

3. Results and Discussion

3.1 Yield per acre per year

As depicted in Table 1. 4 farmers have shown an average fodder yield of 130t/acre, 3 farmers with 110t/acre & remaining 3 farmers have resulted with an average yield of 80t/acre. The high yield in the present study is in accordance with Biradar *et al.* (2014) [3] and Zac (2018) [18], who reported high yields of super Napier varieties. The variations in the production yield of fodder are due to seasonal variations as reported by Anindo *et al.* (1994) [1]. Delena and Fulpagare (2015) [4] reported the high yield of super Napier with good nutritive value aids in fodder preservation by silage.

Table 1: Comparative production parameters of super Napier & CSH-31 Fodder per acre per year (Mean \pm SE)

S. No	Parameters	Treatment Group (Super Napier)	Farmers Practise (CSH-31)
1.	Avg Yield/acre/year	130 tonnes (4 farmers)	67 tonnes
		110 tonnes (3 farmers)	58 tonnes
		80 tonnes (3 farmers)	52 tonnes
2.	Avg cuttings	8	3
3.	Plant height (in cm)	171.18 \pm 1.18	158.62 \pm 0.98
4.	Sale of Slips	30,000/- (4 farmers)	-
		25,000/- (3 farmers)	-
		20,000/- (3 farmers)	-

3.2 Production Parameters in Milch Animals

The present study concurrently aimed at a comparison of milk production parameters & quality of milk by estimation of Fat% & SNF% in the selected animals fed with fodder. The findings were in coincidence with Iqbal *et al.* (2006) [10]; Hukkeri *et al.* (1977) [8]; and Sattar *et al.* (1994) [17]. They observed that Napier fodder contains desirable forage

characteristics *viz.*, high dry matter yield, high protein concentration, high energy concentration (high digestibility), and high intake potential (low fiber content). This might be the reason for increasing the milk yield and milk quality parameters such as fat percent and SNF content in milk when compared to the farmer's practice fed with CSH-31 fodder.

Table 2: Production parameters in milch animals fed with super Napier (Mean \pm SE)

S.no	Parameters	Treatment Group	Farmers Practise
1.	Average Milk Yield (kg/animal/day)	7.37 \pm 0.58	5.45 \pm 0.32
2.	Avg Fat%	4.54 \pm 0.31	3.68 \pm 0.23
3.	Avg SNF%	8.01 \pm 0.13	7.89 \pm 0.67

3.3 Economics

Income generated by the sale of slips @ 60p/slip was observed in the majority of farmers by the sale of 50,000 slips per 3 harvests per year (Table 1) which is in accordance with Potter *et al.* (1987) who reported inventory of feed resources for small animals. Roy *et al.* (2016) [16] reported that the

existing production and marketing system of fodder in the Meherpur district of Bangladesh is a livelihood activity. The increased income in the present study might be due to better production of fodder and additional income generation by the sale of slips.

Table 3: Cost Economics in Production of Super Napier

S. No	Parameter	Rs.
1.	Purchase of 10,000 slips per acre/farmer @ 60p/slip	6000/-
2.	Net income per acre/year for 3 harvests by sale of slips	30,000/-
3.	Net Profit per acre/year for 3 harvests by sale of slips	24,000 \pm 0.75

4. Conclusion

The results from the present study concluded that production of super Napier depicted with a significant increase in an additional source of income of 30,000/- per acre per year for a single household apart from fodder yield for feeding the livestock. This study resulted in the development of self-esteem & entrepreneurship skills among rural youth &

maintenance of animal health.

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