

Original Research Article

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Extension Strategies to Popularisation of Multicut Fodder Sorghum var. COFS-31 in Chitradurga District, Karnataka State, India

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ABSTRACT

The demonstrations were conducted in chitradurga district during 2017-18 and 2018-19 to study on “Extension strategies to popularisation of multicut fodder sorghum var. COFS-31 in Chitradurga district, Karnataka state, India”. These studies were comprised two plots as demo and check plot and demonstrated in 250 farmer’s field. Success stories or technology act as a catalyst in making institution more vibrant, work oriented and people friendly. They infuse a new life in the work culture of KVK and make them more responsive to the needs of farmers. KVK Chitradurga has its own share of technologies identified and methodologies adopted. During the first year, only five farmers were grown the new fodder sorghum variety COFS-31 variety. After the continuous efforts, enthusiasm and dedication of KVK scientists it spread around 1250 farmers of the district with tune of 12.8 per cent adoption in the district within two years. To create awareness on this variety through conducted twelve on and off campus training programmes during implementation period. Among the two fodder varieties, fodder sorghum variety COFS-31 produced higher stem height (210.6 cm), leaf width (4.5 cm) and green fodder yield (89.6 t/ha) and lower stem girth (3.2 cm) over Napier hybrid bajra (210.6, 4.1 , 5.4 and 74.7 t/ha, respectively) which is higher by 19.9 per cent. The higher palatability per cent was recorded in COFS -31 (90.4 %) over Napier hybrid bajra (81.8 %) with tune of 11.5 per cent. The income before and after adaption of this technology were Rs. 17794 /ha and 23215, respectively.

Keywords

Multicut Fodder Sorghum, COFS-31

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Introduction

Success of any technology is the essence of any institution in general and KVK in particular. It depicts the magnitude of work culture. The edifice of income generating activities followed up with field level demonstrations, transfer of technology skills, conducting of front line demonstration,

trainings and other related activities of a KVK stand as a corner stone on which KVK is built. In fact, a KVK without technology is as a human being drained off blood. Success stories or technology act as a catalyst in making institution more vibrant, work oriented and people friendly. They infuse a new life in the work culture of KVK and make them more responsive to the needs of

farmers. KVK Chitradurga has its own share of technologies identified and methodologies adopted.

India has large livestock population in the world. The livestock population has been expanding and changing in response to changes in technological, economic and institutional spheres. The livestock population has been increased significantly from 353.6 million in 1972 to 470.86 million in 1992 and then to 529.7 million in 2007. Crop economy continues to be a dominant sector contributing about three fourth of total agricultural income. Although animal husbandry and dairying are considered supplementary to crop production, they play important roles in the agricultural economy. It is argued that the recent high growth in agricultural sector is mainly contributed by a respectable growth from the livestock sector. In fact, share of livestock in value of agricultural output has increased substantially from 18.0 per cent in 1970-71 to 20.0 per cent in 1980-81, 24.0 per cent in 1990-91 and then to 27.0 per cent in 2007-08 respectively.

Chitradurga district come under central dry zone of Karnataka and receives less and uneven distribution rainfall throughout the year. In this region, dairy is one of the important alternative components for economic security of the farmers. Total live stock population of (Anon., 2016). Chitradurga are 18,47,000 (341000 cattle, 193000 buffalo, 369000 goat and 931000 sheep's, respectively) During the last few years, farmers of Chitradurga suffering from the frequent drought seasons which had a large negative impact on dairy farmers. This is severely threatening the availability of fodder for the dairy animals and leads to shortage of 8 Mt fodder. The problem analysis revealed that the lower yields in this region mainly due to lack of technical knowledge on use of drought resistant, high

palatability and fodder yielding varieties, fodder production technology, farmers grown fodder crops on marginal land and rainfed situation. Thus front line demonstrations, method demonstration, trainings, news paper and radio were planned to create awareness about the technology and improve the yields of fodder in the district.

The introduction of new variety COFS-31, combined use of organic manures, biofertilizers, macro and micronutrient would go a long way in maximizing fodder production per unit area.

In this background, we have planned to conduct the large scale demonstrations on Introduction multicut fodder variety COFS for higher yield in Chitradurga district.

Characters of COFS-31

High yielding and quick growing
Drought resistant
Perennial with multi cut green fodder
First cut is taken after two months sowing and subsequent cuts can be taken at the intervals of 50-60 days
High palatability and thin stem

Preamble

Drought resistant crop of Chitradurga dist.
Mainly cultivated under low fertile and rainfed ecosystem
Huge demand for high palatable green fodder for dairy farmers
Dairy is one of the alternative component for economic security of the farmers

SWOT analysis

The effective implantation of programme needs to assess the following strength, weakness, opportunity and threats in fodder production activity.

Strength	Weakness	Opportunity	Threats
Dairy is one of the important alternative components next to agriculture for economic security of the farmers.	Low productivity due to local varieties Lack of knowledge on fodder production	Lot of scope for high palatable fodder production Dairy is one important component of the district	Labour shortage Scarcity of water Land requirement

Interventions of KVK

Identification of farmers, arranged training programme/capacity building for fodder production and identification of technological gap

Introduction of multi cut fodder sorghum variety COFS-31,

Materials and Methods

The demonstrations were conducted in Chitradurga district during 2017-18 and 2018-19 to study the “Extension strategies to popularisation of multicut fodder sorghum var. COFS-31 in Chitradurga district”. This study comprised of two plots as demo and check plot and demonstrated in 250 farmer’s field with COFS-31 variety. Details of technology demonstrated as below

Preparation of land

COFS-31 requires a good seed bed with fine tilth of soil for better germination. Preparation of land usually consists of ploughing from three to six times, depending on the type of ploughs used which vary in different parts of the states. The clods are to be broken by harrowing.

Seed rate: 5-6 kg/h

A seed of this variety is very small. Hence seeds were mix with fine sand or compost and

sown with spacing of 45 cm from row to row and 10 cm between the seeds.

Seed treatment

Use of certified seeds Treat the seeds with *Azospirillum* (500 g) and phosphate solubilising bacteria (500 g) per ha will increase yield by 10-15 per cent.

Manures and fertilizers

Apply 7.5 t/ha of well decomposed farmyard manure or compost at least 2-3 weeks before sowing and incorporate in the soil. Apply 100 kg nitrogen, 50 kg P₂O₅ and 20 kg K₂O per hectare. Half dose of nitrogen and total amount of phosphorus and potash should be applied at the time of sowing. Top dressing 25 kg nitrogen of two cutting and reaming 25 kg of nitrogen after fourth cutting.

The technologies was shared to farmers through field day, radio programme, bi-monthly, krishi meal and news paper coverage *etc.*,

Comparison of two fodder varieties i.e. fodder sorghum var. COFS-31 and Napier hybrid bajra CO-3

Extension Strategies Adopted By KVK

Based on the constraints faced by the farmers and problems identified by KVK, it was

planned to improved fodder productivity through front line demonstrations in 10 farmer’s fields. trainings and organise field days for wider dissemination of the technology

Results and Discussion

In adoption of any new variety, growth and yield are important criteria to show the performance of giver interventions. The KVK itself took the seed production activities in COFS-31 fodder sorghum variety and produced around 200 kg seeds and distributed around 1250 farmers in the district. With use of this seeds farmers were able to produced around 4600 tonnes of green fodder. The area under fodder sorghum variety COFS-31 increased from 1 ha to 80 ha and it is alternate crop for fodder Napier hybrid bajra CO-3. The per cent green fodder yield was 25.81 per

cent over Napier hybrid bajra CO-3. Reduce dependency on other fodder crops. The large scale adaption this variety mainly due to their high green fodder yields, palatability and drought resistant. The average increase in income of each farmer was 5421 /ha. And also helps to reduce the migration of farmers and rural youth due to encourage of dairy entrepreneurship as one of the important component for economic security of the farmers. During the first year, only five farmers were grown the new fodder sorghum variety COFS-31 variety. After the continuous efforts, enthusiasm and dedication of KVK scientists it spread around 1250 farmers of the district with tune of 12.8 per cent adoption in the district within two years. To create awareness on this variety through conducted twelve on and off campus training programmes during implementation period.

Table.1 Trainings and per cent adoption of technology

Name of the technology	No. of farmers Adopted during first year	No. of farmers Adopted during second year	Percentage adaption	No. of training conducted
Introduction of fodder sorghum var. COFS-31	5	1250	12.8	12

Table.2 Performance of multicut fodder varieties on growth and yield

Fodder varieties	Stem height (cm)	Leaf width (cm)	Stem circumference (cm)	Green fodder yield
T ₁ .COFS-31	215.6	4.5	5.4	89.6
T ₂ .Co-3	210.4	4.1	2.1	76.8
SEm±	1.69	-		3.11
CD (0.05)	4.92	-	-	10.2

Table.3 Attributes and opinion of the farmers about the performance of different multicut fodder varieties

Parameters	COFS-31	Co-3
Growth	Luxuriant	Moderate
Pubescence	Absent	Less
Palatability	Good	Moderately
Preference	Good	Moderately

Table.4 Benefits of the technology

Name of the technology	Palatability Napier hybrid bajra	Palatability (t/ha) COFS-31	Per cent increase in palatability	Per cent increase in milk yield after introduction COFS-31	Income before introduction of COFS-31 (Rs./ha)	Income after introduction of COFS-31 (Rs./ha)	Impact indicator (Rs./ha)
Introduction of fodder sorghum var. COFS-31	81.1	90.4	11.5	12.4	17794	23215	5421.0

Fig.1

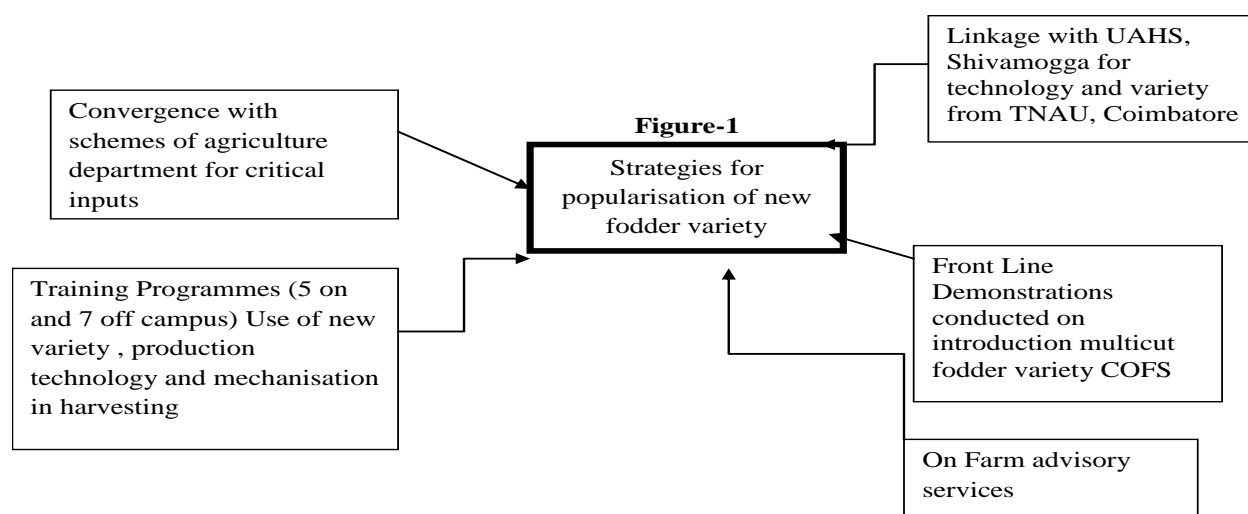


Fig.2 Green fodder yield of the technologies

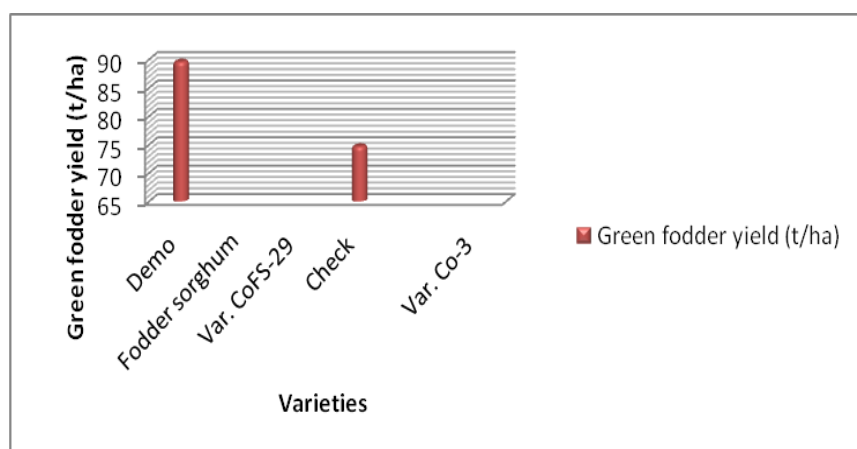


Fig.3 Economics of the technologies

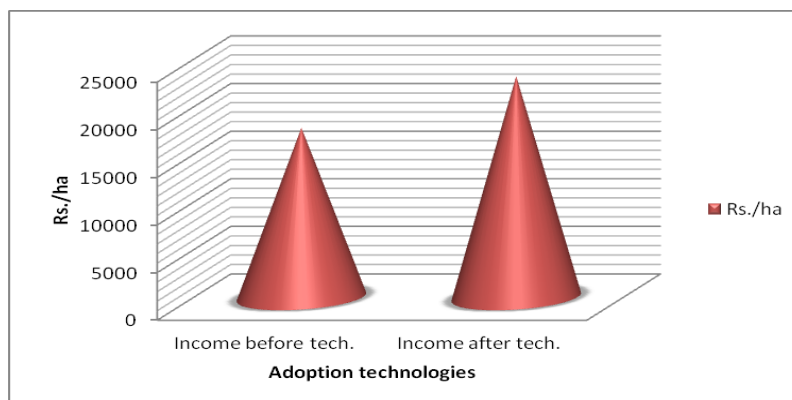
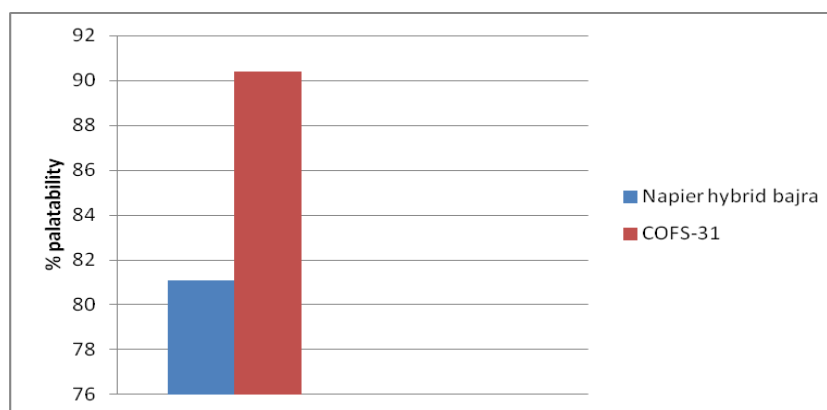


Fig.4 Per cent palatability of technology



The results of two years pooled data revealed that among the two fodder varieties, fodder sorghum variety COFS-31 recorded significantly higher stem height (215.6 cm), leaf width (4.5 cm) and green fodder yield (89.6 t/ha) and lower stem girth (3.2 cm) over Napier hybrid bajra (210.4, 4.1, 5.4 and 74.7 t/ha, respectively) which is higher by 19.9 per cent (Kamal Bai *et al.*, 2017). The higher palatability per cent was recorded in COFS - 31 (90.4 %) over Napier hybrid bajra (81.8 %) with tune of 11.5 per cent (K Sai Maheswari *et al.*, 2019). The income before and after adaption of this technology were Rs. 17794 /ha and 23215, respectively. The impact indicator of this technology was Rs. 5421 /ha. Farmers optioned that COFS-31 have luxuriant growth, less pubescence, high palatability.

Cases of large adoption

Implementation of KVK programme has resulted in cases of large adoption by the farmers in respect new variety COFS-31. Due to continuous persuasion by the scientists of KVK during conduct of FLD and trainings related to introduction of new variety and improved fodder production technology.

In conclusion thus, introduction of new variety COFS-31 with improved production technologies from front line demonstrations, method demonstration, trainings, news paper and radio through KVK interventions has been found more productive and profitable as compared to farmer's practice. This technology is spread in the district and farmers are convinced about the technology.

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