Popularisation of Cumbu Napier CO (CN) in Dairy Cows’ Management at Kanyakumari District

Srivara Buddhi Bhuvaneswari. S*

Assistant Professor, Department of Agricultural Extension and Rural Sociology, TamilNadu Agricultural University, Coimbatore -3.

Corresponding Author
Srivara Buddhi Bhuvaneswari. S
Email: sbb@tnau.ac.in

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ABSTRACT
A study was conducted to understand the livestock rearing behaviour of dairy farmers at Kanyakumari district by the scientist of Krishi Vigyan Kendra, Kanyakumari. The study revealed that the availability of green fodder to dairy animals was very low. It led to poor fertility and productivity of animals in turn made dairy enterprise as an uneconomic activity. Hence, it is decided to introduce high yielding green fodder grass Cumbu Napier CO(CN) 4 to meet the green fodder requirement. Popularisation of green fodder Cumbu Napier CO(CN) 4 and feeding green fodder to the animals by following proper feeding procedures was administered as technological intervention among the dairy farmers of Kanyakumari district. All possible extension methods such as awareness cum sensitization programmes, training cum exposure visits, meetings, Frontline demonstrations, method cum result demonstrations, technology week celebration cum farmers’ day, radio talk and publications were used to have firsthand knowledge, experience and to get confidence. This CO (CN) 4 recorded 45.9 per cent increased yield over the control CO (CN) 3. This hybrid is highly preferred by the dairy animals because of its high palatability. At last dairy farmers' income was enhanced from Rs. 800 to 1100 per animal per month at a minimum level.
INTRODUCTION

Rearing livestock in general and rearing dairy cows in specific is the allied income generating activity of people of Kanyakumari district. A study was conducted to understand the livestock rearing behaviour of dairy farmers at Kanyakumari district by the Krishi Vigyan Kendra scientist. In this study, a survey was done among 50 livestock rearers, 50 extension officials comprising each 25 from Department of Animal Husbandry and secretaries of Aavin milk society. The study reveals a special and interesting phenomenon that majority (73 percent) of the livestock rearers are landless. Remaining 27 percent of land owning livestock rearers falls under small and marginal land holding category. This finding derives support from Kumar et al. (2013). He reported that small and marginal farmers are the predominant cattle owners of the Kerala state and they have either limited or no land at all for odder production. They are also not willing to cultivate fodder crops in the available limited area. Hence green fodder crops cultivation was found nil. They are feeding green fodder to their dairy animals by cutting the grasses and waste plants available in the bunds of different cropped and uncropped fields by themselves (26 percent) with payment to the land owners from whose field the grasses were being cut or buying the grasses (74 percent) in bundles from the sellers @ Rs. 20 per bundle. Besides they are allowing animals for grazing in the well-established coconut gardens, rubber plantations, harvested paddy fields with the permission of land owners and waste Pasteur lands. This is the rearing practice adopted by livestock rearers. This finding is also supported by Hall et al (2007). He reported that livestock producers meet their fodder requirements through a combination of crop residues and grazing on common lands, privatelands, forests, fallow agricultural lands and harvested agricultural lands. Fodder requirements are also met through cultivated forage crops (cultivated mostly by large landholders). Others purchase this folder.

The study reveals that the availability of green fodder to dairy animals is low (40 percent), sometimes scarce during drought (30 percent) and quantity fed to animals also varies from low to medium. It is found that fertility and productivity of animals also varies between very low to medium.

As a result, this study concludes that the dairy farmers are not feeding their animals with balanced diet. This type of feeding behavior seriously affecting animal health and fertility in turn reduces productivity of animals and profitability of livestock rearers.

Keeping the above realities, it is decided to introduce high yielding green fodder grass Cumbu Napier CO (CN) 4 to meet the green fodder requirement. This decision gets support from Hatam et al. (2001). He opined that the overall performance of the animal relies upon the amount or quality as well as availability of green fodder at numerous instances for the duration of the year.

TECHNOLOGY INTERVENTIONS ADOPTED:

Popularisation of green fodder Cumbu Napier hybrid CO (CN) 4 with integrated crop management practices was administered as technological intervention. In addition, feeding green fodder to the animals by following proper feeding procedures was also disseminated.

ACTIVITIES PERFORMED TO POPULARISE CUMBU NAPIER HYBRID CO (CN) 4

Awareness was created during meetings, technology week celebration and through radio talk, publications and sensitization programme

- Training cum exposure visits were arranged to different institutions like KVK, Namakkal and Department of Fodder Crops, Centre for Plant Breeding and
Genetics, TNAU, Coimbatore to have firsthand knowledge, experience and to get confidence.

- Farmers were also brought to TNAU, Coimbatore to participate in the Farmers’ Day celebration to reinforce the knowledge on fodder crops.
- Farmers were explained about fodder crops by organizing on campus, off campus and vocational training programmes.
- Frontline demonstrations were conducted to imbibe skill on single and mixed foddercrop cultivation and to popularize the same.
- Method demonstrations were done on planting slips and rooted cuttings of fodder crops; cutting and feeding the fodder crop after harvesting.
- Result demonstrations and Krishi melawere organized in the FLD farmer’s field to sensitize other peer group farmers about the production potential of Cumbu Napier CO (CN)4
- Extension functionaries training programme was also arranged to the Deputy Directors, Assistant Directors and Assistant Veteriary Surgeons of Department of Animal Husbandry, Kanyakumari district so as to impart knowledge on different fodder crops.
- Secretaries of Aavin milk society were also trained about the same and requested to disseminate this technology to the members of their societies.
- KVK, Kanyakumari and Livestock Farm, Department of Animal Husbandry, Tirunelveli district is the source for supplying CO (CN) 4 slips.
- Booklets, leaflets, folders were published to enhance the knowledge and to have wider publicity.

- Radio talks were given to create wider publicity about this crop.

RESULT: The results of FLD implemented to popularize fodder crop Cumbu Napier hybrid ’ CO(CN)4 is given below in the Table 1 and 2. It could be inferred from Table 1 that CO (CN)4 recorded 45.9 per cent increased yield over the control CO (CN) 3 with the BCR of 2.27. Table 2 reveals that Cumbu Napier hybrid CO (CN) 4 recorded higher germination percentage, good establishment rate, more no. of tillers, better plant height and more yield than CO (CN) 3.

**Table 1. Demonstration details on crop hybrids**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Name of the Hybrid</th>
<th>Yield (kg/ha)</th>
<th>parameter</th>
<th>Demonstration</th>
<th>Local check</th>
<th>% change</th>
<th>Economics (Rs/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fodder crop</td>
<td>Cumbu napier hybrid’ CO (CN)4</td>
<td>2188</td>
<td>1500</td>
<td>15.87</td>
<td>20383</td>
<td>273500</td>
<td>553177</td>
</tr>
</tbody>
</table>

**Table 2. Data on additional parameters other than yield**

<table>
<thead>
<tr>
<th>Data on other parameters in relation to technology demonstrated</th>
<th>Demo</th>
<th>Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap filling (%)</td>
<td>2-5</td>
<td>10-15</td>
</tr>
<tr>
<td>No. of tillers / hill</td>
<td>8-10</td>
<td>7-9</td>
</tr>
<tr>
<td>Plant height (cm)</td>
<td>270</td>
<td>210</td>
</tr>
<tr>
<td>No. of economic harvest</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

CONCLUSION:

The fodder of this hybrid is more nutritive than CO (CN) 3 and is highly preferred by the dairy animals because of its high palatability. Feeding fodder after cutting into small pieces (2-inch size), reduced feed wastage and improved feed conversion ratio. Rate of infertility reduced and animal health was improved. Milk yield was increased and quality of milk was also significantly improved.
improved. At last dairy farmers income was enhanced from Rs. 800 to 1100 per animal per month. This is supported by the research findings of Reeba et al. (2020). She conducted a research study on perception of farmers on fodder cultivation and found that nearly 40 percent of the dairy farmers ’ strongly agreed’ the green fodder cultivation is profitable. Reeba et al. (2020) opined in another article that the impact of fodder crop ranges from improving the dairy yield and nutritional quality of milk to the livelihood of farmers. Similar results are reported by Kadam et al. (2017). He described Hybrid Napier is resourceful forage grass due to its perennial nature, excessive yielding ability, palatability, suitability for silage making and low oxalate content than any other grasses. It produces more nutritious fodder with good palatability, taste and succulence, which is relished by the animals. Hence, it fulfils the nutritional needs and dietary requirements of the animals, reduces expenditure on feed procurement, increases milk productivity and hence, makes the dairy farming more feasible, viable and profitable.

Fig: 1. Creating awareness in Farm school programme under ATMA at Melpuram block of Kanyakumari district

Fig: 2. FLD on fodder crop Cumbu Napier CO(CN) 4 cultivation

Fig: 3. FLD established in Mr. Mayandi’s field at Mayiladi Vilakku, Kanyakumari District

Fig: 4. Close up view of CO (CN) 4 Plant in Mr. Mayandi’s field at Mayiladi Vilakku, Kanyakumari District.
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