



PROMOTION OF FODDER TECHNOLOGIES FOR ENHANCED MILK PRODUCTIVITY

Training programmes : 68 Nos, 310 farmers
 Front Line demonstrations : 105 Nos.
 Extension programmes : 289 Nos.
 Sale of fodder seeds : 670 Kgs
 Sale of grass slips : 3 lakhs
 Sale of Azolla culture : 225 Kg



Output : The data on feeding of fodder produced through following technologies to milch animals for enhancing the milk yield is given below.

Technology	No. of FLD / units	No. of farmers	Milk Yield (Its./day/animal)		Increase in yield (%)	Net Returns (Rs./milch animal/year)	
			Demo	Local		Demo	Local
Hybrid Napier, Rhodes grass, Guinea grass, Stylo heamata & Azolla as feed	50 Fodder Cafeteria	50	8.42	7.25	16.13	35073	21229
Silage making	40	40	8.10	6.70	20	33911	12733
Hydroponics	15	15	7.78	7.00	10	32836	22005

Outcome and Impact : Lot of awareness has been created on importance of balanced nutrition. A total of 230 fodder cafeterias have been established by dairy farmers. The majority of them expanded the dairy unit and these cafeterias have become source of planting material for other dairy farmers within and outside the district. During last 5 years, 35 owners of fodder cafeteria have sold planting material worth of Rs.17.00 lakhs.



DETAILED IMPACT ANALYSIS OF FODDER CAFETERIA IN FARMERS' FIELDS

INTRODUCTION:-

Livestock plays a vital role in the livelihoods of farmers. It is the supporting income source to the agriculture profession. Nowadays it has become major source of regular income. The livestock sector especially dairy holds the greatest profits for sustainable development of rural economy. But core constraint that is confronting the dairy sector is low output of milk per animal. Over dependence on crop residue for feed and lack of quality green fodder are the major reasons for low output of milk production.

Among the livestock enterprise, dairy is the major livelihood support system next to agriculture in Gadag district. Total cattle population in the district is 238772. Though, buffalo forms the major share of total cattle population, rearing of improved breed of cross bred cows is picking up in the district. The dairy farmers in Gadag district are largely unaware about fodder and grass cultivation. KVK felt it important to make dairy farmers aware about fodder and grass crops so as to enhance the milk productivity. In this direction, KVK made interventions through organisation of Front Line Demonstrations on improved varieties of fodder and grass crops with an objective of enhancing the milk productivity and to develop fodder banks in different locations of Gadag district for serving as a source of planting material for other farmers. The demonstrations have been laid out in the cultivated land, on the field bunds, along the water ways and in between the tree rows depending on the requirement of individual farmer's livestock composition.

KVK'S INTERVENTIONS FOR PROMOTION OF FODDER AND GRASS CROPS:

- 1) FRONT LINE DEMONSTRATIONS:** KVK organised Front Line Demonstrations on improved varieties of grass and fodder crops on farmers' fields. Since 2011-12 to 2015-16, KVK conducted Front Line Demonstrations in 11 villages of Gadag district involving 42 farmers. Grass species of Hybrid Napier, Guinea and Rhodes grass were demonstrated and these FLDs were developed as fodder banks. The details are presented in Table:1

TABLE: 1 FRONT LINE DEMONSTRATIONS ORGANISED BY KVK

Year	Name of the fodder and grass crops	No. of farmers	Name of villages	Taluk
2011-12	Hybrid Napier (DHN-6), Guinea grass and Rhodes grass	18	Hadagali	Shirahatti
			Huilgol	Gadag
			Jakkali	Ron
			Petalur	Mundaragi
2013-14	Hybrid Napier (DHN-6), Guinea grass and Rhodes grass	10	Jakkali	Ron
			Shirunja	Gadag
			Kadakol	Shirahatti
2014-15	Hybrid Napier (DHN-6) Guinea grass and Rhodes grass	10	Kakkur	Mundaragi
			Shagoti	Gadag,
			Nabhapur	Gadag,
			Arishinagodi	Naragund

Year	Name of the fodder and grass crops	No. of farmers	Name of villages	Taluk
2015-16	Hybrid Napier (DHN-6) Guinea grass and Rhodes grass	4	Nabhapur	Gadag
			Kuradagi	Ron
			Beladadi	Gadag
TOTAL		42		

- 2) **TRAINING PROGRAMME ON DAIRY AND FODDER PRODUCTION:** KVK organised 39 training courses on dairy management and fodder production for dairy animals. Major focus was on enhancing the milk production through feeding of green fodder through cultivation of important varieties of grass. A total of 819 farmers participated in the training programmes during 5 years period. The details are presented in Table -2

TABLE: 2 TRAINING PROGRAMMES CONDUCTED ON DAIRY MANAGEMENT AND FODDER PRODUCTION

Year	No. of farmers	No. of participants
2011-12	4	71
2012-13	7	185
2013-14	9	192
2014-15	7	160
2015-16	11	211
TOTAL	39	819

- 3) **SALE OF GRASS SLIPS FROM KVK:** During 2010-11, KVK introduced improved varieties of grasses viz., Hybrid Napier (DHN-6), Guinea grass, Rhodes grass and Signal grass in its instructional farm and developed it as a source of planting material. During the period from 2011-12 to 2015-16, KVK sold 103278 slips of different varieties of grass to 113 farmers. The details of the sale is presented in the Table-3

TABLE: 3 SALE OF GRASS SLIPS BY KVK

Year	Hybrid Napier		Guinea grass		Rhodes grass		Congo signal	
	No. of slips	No. of farmers	No. of slips	No. of farmers	No. of slips	No. of farmers	No. of slips	No. of farmers
2011-12	2000	2	2700	2	3100	2	-	
2012-13	4500	6	1500	4	1450	2	560	1
2013-14	-	-	1050	2	1400	1	2100	1
2014-15	4826	7	8948	10	7746	10	11258	10
2015-16	12100	15	10520	13	14520	13	1300	10
TOTAL	23426	30	24718	33	28216	28	26918	22

4) ADVISORIES, PROJECT REPORTS AND CONSULTANCY:

Many of the youths who have undergone training at KVK started dairy enterprise. KVK supported these youths in terms of preparation of project reports, supplied them grass slips and provided continuous advisories. During 2012-13 to 2015-16, KVK has prepared and provided project reports to 48 youths for establishment of dairy enterprise in the district.

IMPACT ANALYSIS OF KVK INTERVENTIONS

METHODOLOGY:

- i) During the 5 years period from 2011-12 to 2015-16, KVK promoted grass and fodder technology through Front Line Demonstrations to 42 farmers. Out of these farmers, only 22 farmers have maintained the fodder bank. Rest of the farmers discontinued due to shortage of water. These 22 farmers were selected for studying the impact analysis.
- ii) About 48 farmers have taken project reports along with advisory and grass slips from KVK. Out of these farmers, 28 farmers have maintained the dairy enterprise and these 28 farmers were also included for impact analysis.
- iii) A total of 50 farmers/ youths forms the sample for impact analysis
- iv) A simple structured schedule was developed and the information was collected during ex-trainee meeting of these dairy farmers. Apart from this, focussed group discussion was held with the farmers.

RESULTS OF IMPACT ANALYSIS:

- i) **GEOGRAPHICAL PROFILE OF DAIRY FARMERS:** Majority of the dairy farmers (42 percent) belongs to Gadag block followed by Shirahatti block (18 percent), Ron and Mundaragi block (Each 16 percent). The details are presented in Table -4

TABLE: 4 TALUKWISE DAIRY FARMERS TAKEN FOR THE STUDY (N=50)

Sl. No	Name of the Taluk	No. of dairy farmers	Percentage
1	Gadag	21	42
2	Ron	8	16
3	Mundaragi	8	16
4	Shirahatti	9	18
5	Naragund	4	8
	TOTAL	50	100

- ii) **SIZE OF THE DAIRY ENTERPRISE:** Forty two percent of the respondent dairy farmers posses dairy unit having dairy animals in the range of 3-4 followed by 38 percent in 1-2 category and 16 percent in 5-6 category. The data is presented in Table - 5

TABLE: 5 SIZE OF DAIRY ENTERPRISE OF THE DAIRY FARMERS (N=50)

Sl. No	Unit size (milch animals)	No. of dairy farmers	Percentage
1	1-2	19	38
2	3-4	21	42
3	5-6	8	16
4	>6	2	4
	TOTAL	50	100

- iii) **SIZE OF FODDER BANKS MAINTAINED BY THE DAIRY FARMERS:** Majority of the farmers have maintained and increased the size of the fodder bank comprising of grass varieties of Hybrid Napier, Guinea grass and Rhodes grass. The dairy farmers preferred to increase the area under Hybrid Napier grass as it is high yielder. Nearly 50 percent of farmers have the fodder bank having the size between 6-10 guntas. There have been also considerable increase in area under guinea and rhodes grass (Table - 6)

TABLE: 6 SIZE OF FODDER BANK OF DIFFERENT GRASS SPECIES

Sl. No	Name of Grass Species	< 5 Gunta	6-10 Gunta	11-15 Gunta	16-20 Gunta	>21 Gunta
1	Hybrid Napier	10	21	12	5	2
2	Guinea grass	24	12	-	-	-
3	Rhodes grass	19	21	-	-	-

- iv) **PRODUCTIVITY OF MILK:** The data presented in Table-7 reveals that milk productivity of dairy cows is in the range of 9-10 liters per day per animal owned by 44 percent of farmers. This is followed by 28 percent in the category of 11-12 liters/day and 20 percent in 12-15 liters/day. The details are presented in Table - 7

TABLE: 7 PRODUCTIVITY OF MILK

Sl. No	Average milk productivity/day/milch animal	No. of farmers	Percentage
1	Upto 6	1	2
2	6-8	3	6
3	9-10	22	44
4	11-12	14	28
5	12-15	10	20
	TOTAL	50	100

- v) **MONTHLY INCOME FROM SALE OF MILK:** Thirty four percent of dairy farmers have earned an income in the range of Rs.3001-5000 followed by 24 percent in Rs.2001-3000 category and 16 percent in Rs.1000-2000 category. Out of total respondent dairy farmers, 6 are earning an income in the range of Rs.5001-8000 per month and 7 dairy farmers are earning more than Rs.8000 per month. The details are presented in Table-8.

TABLE: 8 MONTHLY INCOME OF DAIRY FARMERS FROM SALE OF MILK (N=50)

Sl. No	Income range (Rs.)	No. of farmers	Percentage
1	1000 to 2000	8	16
2	2001 to 3000	12	24
3	3001 to 5000	17	34
4	5001 to 8000	6	12
5	>8000	7	14
	TOTAL	50	100

- vi) **GRASS SLIPS SOLD BY THE DAIRY FARMERS:** Major focus of KVK was to develop the fodder banks as the source of planting material for other farmers. All the FLD farmers and consulting dairy farmers were oriented by KVK regarding fodder bank concept. Out of the 50 respondent dairy farmers, 36 of them were able to supply grass slips to 464 other farmers in Gadag district as well as other district farmers. The details are presented in Table: 9

TABLE: 9 GRASS SLIPS SUPPLIED BY THE FARMERS TO OTHER FARMERS

Sl. No	Name of grass	Within the villages	Outside the village	Outside the district	Total
1	Hybrid Napier	112	176	8	296
2	Guinea grass	71	48	3	122
3	Rhodes grass	16	27	3	46

- vii) **INCOME REALISED THROUGH SALE OF GRASS SLIPS:** The fodder banks promoted by KVK have not only served as a source of planning material, but also earned income for the fodder bank owners. Perusal of the Table-10 reveals that about 23 dairy farmers have earned an income between Rs.10,000 to Rs.20,000 during last two years followed by 15 farmers earning less than Rs.10,000 and 10 farmers between Rs.20,000-30,000

TABLE: 10 INCOME REALISED FROM SALE OF GRASS SLIPS DURING PREVIOUS 2 YEARS

Name of the grass	INCOME RANGE			
	<10,000	Rs.10,000-20,000	Rs.20,001 – 30,000	Rs.30,000 – 40,000
Hybrid Napier	8	19	7	2
Guinea grass	3	2	1	-
Rhodes grass	4	2	2	-
TOTAL	15	23	10	2

CONCLUSION: The Fodder banks promoted by KVK have not only enhanced the milk productivity of milch animals but area increased the profitability in dairy enterprise. The objective of establishment of fodder bank is achieved by KVK as these fodder banks have served as the source of planting material. Out of 50 dairy farmers taken for the study 36 farmers have supplied grass slips to 464 farmers of Gadag district as well as other districts. These farmers have also earned considerable income from sale of grass slips.