



RESEARCH ARTICLE

IMPACT OF BYPASS FAT FLD ON MILK YIELD, ADOPTION, CONSTRAINTS FACED AND SUGGESTION OF DAIRY FARMERS OF AHMEDABAD DISTRICT OF GUJARAT

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ABSTRACT

Hand on experience (result demonstration), adoption rate, constraint faced and suggestion are important part to boost the production and economic wellbeing of dairy farmer. The result demonstration on feeding bypass fat to dairy animals showed higher milk production and milk fat%. Adoption study revealed that feeding colostrums to newly born calves, milking time and milking intervals had higher adoption (64-71%), whereas feeding bypass fat to dairy animals had lower adoption (19%). The lower adoption of technology might be linking to lower availability and higher cost of inputs at farmer's door step. This problem can be solved by availability of credit facility, canal irrigation and more number of veterinary dispensaries in area.

INTRODUCTION

Hands on experience (result demonstration), adoption, constraint analysis and suggestion are important part in agriculture and allied system to boost the production and economic wellbeing of dairy farmers. Dairying is the major instruments which can bring socio-economic transformation to the rural poor in India. The Indian dairy sector gain substantial momentum during the last three decades and achieved milk annual production of 127 million tonnes of milk in 2011-12 (MOF, 2011). This has made the country top milk producer in the world. Domestic Indian demand for milk and milk products is projected at 200-210 million tonnes by 2021-22 (Anonymous, 2011). Even though rapid growth, there is a huge gap between the potential and yields of milk. It is estimated that only 60-65% of production potential of dairy animals is realized in different parts of the country because of problems related to feeding, breeding, health and management (Birthal and Jha, 2005). The low productivity of dairy animals is primarily due to lower genetic potential and lower nutrients supply or orthodox feeding (Garg et al., 2012).

Energy demands of dairy animals exceed energy intake up to 100 days postpartum. Under feeding of dairy animals leads to decreased milk yield, weight loss, reproductive disturbance, ketosis and fatty liver formation. Cereal grains can provide source of energy, but high fermentable carbohydrate, lower fiber and competition with human food limits use in dairy animals feeding. Fat supplements can provide a concentrated source of energy without changing ration fibre and carbohydrate dynamics. Fat in bypass technology generally have calcium salt of fatty acids and that too salt of oil industry by-products having free fatty acids, provides useful and economic means of energy supplementation to the dairy animals. Feeding of bypass fat to dairy animals increases milk yield, improve milk fat and reproductive performance; and lower chance of metabolic disease- ketosis of dairy animals in the field. Keeping above facts in mind research study was undertaken with following objectives.

Objectives

- To study effect of bypass fat feeding on milk yield and milk fat %
- To know the technology adoption, constraints faced and suggestions given by milk producers.

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Table 1. Milk yield and milk fat% of cows and buffaloes

Dairy animals	No.	Parameters	Control	Bypass fat	% increase over control
Cow	26	Milk yield kg/day/animal	9.99 ^a ± 0.21	10.70 ^b ± 0.26	7.11
	26	Milk fat%	4.40 ^a ± 0.07	4.79 ^b ± 0.08	8.86
Buffalo	22	Milk yield kg/day/animal	10.49 ^a ± 0.21	11.50 ^b ± 0.26	9.63
	22	Milk fat%	7.14 ^a ± 0.07	7.70 ^b ± 0.08	7.84

^{ab} Means with different superscripts in rows within parameter differ significantly (P<0.05)

Table 2. Adoption of improved animal science technologies

Sr. No.	Item	No.	Per cent
1	Milking time	94	65.3
2	Feeding colostrums to newly born calf	102	77.8
3	Water to be given to dairy animal every day	79	54.7
4	Time of intervals between milking	93	64.6
5	Vaccination schedule in dairy animals	22	15.3
6	Time of conceiving after heat	68	47.2
7	Methods of giving dry and green fodder	57	39.6
8	Primary treatment of diseased dairy animals	51	35.4
9	Artificial insemination	87	61
10	Examination of pregnancy diagnosis after service	64	44.4
11	Balanced feed feeding	44	30.6
12	Feeding bypass fat to dairy animal	19	13.2
13	Feeding mineral mixture to milking animal every day	41	28.5
14	Use of mosquito net- seasonal management	40	27.8

Table 3. Constraints faced by the milk producers in adoption of animal science technology

Sr. No.	Constraints	No.	Per cent
1	Lower milk yield of cow/buffalo	100	69.4
2	Insufficient credit facility	93	64.6
3	Unavailability of green fodder in summer	64	44.4
4	High cost of inputs	92	63.8
5	Availability of inputs at door steps	90	62.5
6	Difficulty in timely availability of artificial insemination service	59	41.0

Table 4. Suggestions given by the milk producers

Sr. No.	Suggestions	No.	Per cent
1	There should be availability of credit facility	109	75.7
2	There should be more number of veterinary dispensaries	70	48.6
3	Create more canal irrigation facilities	71	49.3

METHODOLOGY

Present study was carried out during 2008-09 to 2012-13 periods in two parts in Ahmedabad district. In part one total of 48 bypass fat front line demonstrations (FLDs) including 26 in cows and 22 in buffalo was given to selected progressive farmers having two or more animals to fed dairy animals @ 100 g/day/animal for 90 days of four taluka of Ahmedabad district. Equal numbers of animals kept in control for study. Weekly milk yield and weekly milk fat% was recorded of dairy animals receiving bypass fat and animals kept as control (Table1). Fat percent was measured with milko fat tester machine in village cooperative facility.

Generated data were analyzed with the help of SPSS package programme (SPSS 9.00 software for Windows, SPSS Inc., Chicago, IL). In second part total 144 milk producers including 48 FLD farmers and double numbers from same village of FLD beneficiaries were selected as sample milk producers for the study. Data have been collected by structured interview schedule and presented in Table 2, 3 and 4.

RESULTS AND DISCUSSION

Study 1: Feeding bypass fat to dairy animals resulted in 7.11% higher milk production (10.70 kg/day/animal) than control (9.99 kg/day/animal) in cow. Milk production was also increased (11.50 kg/day/animal) by 9.63% than control (10.49 kg/day/animal) in buffalo. Feeding bypass fat to dairy animals resulted in higher (P< 0.05) both milk production and milk fat% in cow and buffalo. Higher (6.68%) milk production and higher milk fat% (4.26%) in buffalo by feeding bypass fat @ 100 g/day for 30 day prepartum and 15 g/day/kg of milk for 120 days postpartum reported by Rameke *et al.* (2014). The 16.23% higher milk production was reported by feeding calcium salts of palm oil fatty acids @ 200 g/day/head to crossbred dairy cows (Purushothaman *et al.*, 2008). Increased in the milk production of dairy animals might be due to energy available during high energy demands up to 100 days postpartum.

Study 2: From Table 2, it can inferred that great majority (77.8 per cent) of the milk producer have adoption of feeding colostrums to newly born calf, followed (65.3 per cent) by

milk producer have adoption of the milking time and lowest (13.2 per cent) number of the farmers have adoption of feeding bypass fat to the dairy animal for higher milk production and improved fat per cent. Data of Table 3, revealed that majority (69.4 per cent) of the milk producers have constraint of lower yield of cows as well as buffalo, while 64.6 per cent milk producers have constraint of insufficient credit facility and lowest (41.0 per cent) farmers have constraints of timely availability of artificial insemination service. Per cent analysis of data Table 4, highlighted farmers suggestion (75.7 per cent) of need of availability of credit facility followed (49.3 per cent) creation of more canal irrigation facilities.

Conclusion

Feeding of bypass fat @ 100 g/day/head resulted in higher milk production. Majority of milk producers have adoption of feeding colostrums to newly born calf followed by milking time of dairy animals. The major problems faced by milk producers were lower milk yield of dairy animals, insufficient credit facility and high cost of dairy inputs. They have suggested that there should be more credit facilities, more canal irrigation facilities and more number of veterinary dispensaries. The findings of this study are in line with findings of Vyas *et al.* (2011), Lunagariya *et al.* (2011), Toppo Ambrose *et al.* (2004); and Vyas and Patel (2004).

REFERENCES

- Anonymous, 2011. Website of Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India, <http://dahd.nic.in>.
- Birthal, P.S. and Jha, A.K. 2005. Economic losses due to various constraints in dairy production in India. *Indian J. Anim. Sci.*, 75(12):1470-1475.
- Garg, M.R., Sherasia, P.L., Bhanderi, B.M., Phondba, B.T., Shelke, S.K. and Makkar, H.P.S. 2012. Effects of feeding nutritionally balanced rations on animal productivity, feed conversion efficiency, feed nitrogen use efficiency, rumen microbial protein supply, parasitic load, immunity and enteric methane emissions of milking animals under field conditions. *Anim. Feed Sci. Tech.*, 179:24-35.
- Lunagariya, P.M., Godhani, P. H., Shakya, H. B. and Patel, A. J. 2011. Adoption of improved animal science practices by the milk producers in Bhal region of Gujarat State. *Indian Journal of Agriculture Research and Extension*. 4:35-38.
- MOF 2011. Economic Survey 2010-11: Agriculture and Food Management. Ministry of Finance, Government of India, New Delhi, India.
- Purushothaman, S., Anil Kumar and Tiwari D. P. 2008. Effect of feeding calcium salts of palm oil fatty acids on performance of lactating crossbred cows. *Asian-Aust. J. Anim. Sci.* 21(3): 376 – 385.
- Ramteke, P. V., Patel, D. C., Parnerkar, S., Shankhpal, S.S., Patel, G.R., Katole, S. B. and Pandey, A. 2014. Effect of feeding bypass fat prepartum and during early lactation on productive performance in buffaloes. *Livestock Research International*. 2(3): 63-67.
- Toppo Ambrose, Trivedi M. S. and Patel, A. 2004. Participation of farm women in dairy occupation. *Gujarat Journal of Extension Education*. (15): 15-21.
- Vyas, H. U., Lunagariya, P.M. and Chaudhary, D. D. 2011. Adoption of improved animal science practices by the milk producers in Bhal region of Gujarat State. *Research Wave*. II (2):6-7.
- Vyas, H.U. and Patel K. F. 2004. Effect of management efficiency and economic performance of milk producers. *Gujarat Journal of Extension Education*. (15): 75-76.
