

COMMERCIAL DAIRY FARMING – SUCCESS AND FAILURES LESSONS FOR SCALING UP

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Indian perspective

India is the largest producer of milk, producing more than 120 million tons of milk per annum. Dairying is a centuries-old tradition for millions of Indian rural households and domesticated animals are integral part of the farming systems. Milk contributes more to the national economy than any other farm commodity. In the context of poverty and malnutrition, milk has a special role to play for its many nutritional advantages as well as providing supplementary income to some 70 million farmers in over 500,000 remote villages (Dairy India, 2007). More importantly, the farmers earn an average 27.3 percent of their income from dairying, with as high as 53 percent for landless and as low as 19 percent for the large farmers.

The productivity of dairy cattle in India ranges from 2.5 litres to 12.0 litres, which is based on the breed and the region. Nearly 25% of the cattle are good with breed characters while others are non-descript. Low producing animals are more in number (about 70%) which falls below 2 litres per day.

The Indian dairy sector is however likely to witness rapid changes in the near future fuelled by the following factors:

- 1) Milk Production growing at 3 % and consumption of milk and products derived from it growing at more than double that rate.
- 2) The sustained rise in per capita income fuelling a rapid growth in demand for animal food products.
- 3) The rapid rise in per capita expenditure on milk and milk products.
- 4) Changes in consumption patterns with an increased proportion of processed foods, especially dairy products, in the diet of Indians. Growth in demand is likely to be widespread cutting across class and regional distinctions.
- 5) The Planning Commission working group on Animal Husbandry has stated that the demand for animal food products is income elastic and the low-income households with rise in their income will spend more on them.
- 6) Finally, the world demand for dairy products continues to grow and there are even predictions of increased imports of dairy products.

Success and failures

Dairy farming is successful in Haryana, Punjab and few northern states of the country and it is not so in other states. Critical analysis lists the following reasons for the success in north-western and few northern states.

1. Dairy sector is much more organised in northern states than in central and southern states
2. Breed registration and performance recording are the regular features

3. Breed societies maintain and supply superior germplasm to the farmers
4. Farmers skill and ability are relatively superior
5. Quality control on semen quality is very much assured
6. Culling is regular and unproductive animals will not be included in the production agenda
7. Milk and milk products consumers are more in almost many states north to Maharashtra and Rajasthan, whereas it is reverse in southern states
8. There is a huge market existing for milk products and milk sweets are one of the item included in the regular meal
9. Year round distribution of sufficient rainfall is another major criteria which favours uninterrupted fodder production and supply.
10. Farmers are well versed with fodder production and preservation methods
11. Fodder chopping is routine practice and there is no farm household without a chaff cutter
12. Due to continuous agricultural practices, the feed raw materials are available at a reasonable cost throughout the year.
13. Milk and confectionaries industries are well established and supporting the dairy industry significantly

Production management and targets

100 days contract with the cow

After calving, a cow should conceive before 100 days. This is the target. To achieve this, the following practices are recommended.

- a. Understand the lactation curve. Achieve the peak yield early before 42 days.
- b. Feeding the cow to its body weight and milk yield is a good practice
- c. Never use hormones to induce/increase milk secretion, which will delay post partum oestrus.
- d. Protect the udder with "dry cow therapy" and prevent mastitis
- e. Use "teat dips" and follow strict udder hygiene
- f. Don't take up heavy treatments during the first 60 days.
- g. Check the body weight every month and plot a graph
- h. Don't try to induce milk secretion hormonally
- i. Avoid waiting for oestrus after 80 days of calving
- j. Avoid third insemination for a repeating cow. Start hormonal approach to make the animal settle down
- k. Assess the body condition score every fortnight and keep record.
- l. Ensure good quality semen and quality insemination
- m. Inseminate the mounted animal immediately and the mounting animal after 8 hours.
- n. Post insemination antibiotic therapy is a good practice.

Milk yield and management

In dairy farming, milk is the secondary product and calf is the main product. Aiming at "one calf per year" improves the reproduction as well as milk production. In

Indian organised farm conditions, the average milk yield of crossbred cattle ranges from 7 to 9 litres against 4 to 6 litres in un-organised conditions. For instance, the farmers are still not familiar with modern feeding concepts. Feeding of cattle to maximise the milk production is an art and the farmers should be exposed on these areas. Summer management of cattle and reducing the inter-calving period are the key areas. After calving a cow should be made pregnant atleast within 100 days. This is a possible target provided the heat detection, inseminations are properly carried out.

Body condition scoring

An assessment of body condition, based on 8 skeletal check points is in practice. This is user friendly and simple. A scale of 1 to 5 is used with a minor division to a scale of 0.25 is framed to structure the body condition and finding out the suitability of the animal for insemination. At any time, the body condition should be at a range of 3.0 to 3.5.

Parts of a dairy cow used to score		Vertebrae in the loin area	Cross section at the hook bones	Line from the hook bone to the pin bone	Cavity between tailhead and pin bone	
	(2 of 2)	Rear	Rear	Side	Rear	Angled
1	Severe underconditioning or extremely thin					
2	Frame obvious					
3	Frame and covering well balanced					
4	Frame not as visible as covering					
5	Severe overconditioning or extremely fat					

Steaming up and challenge feeding

Before 2 months of calving, the cow should be fed with concentrate at a level that promotes both calf growth and keep good body condition. This steaming up process should end in challenge feeding. Two weeks prior to calving the cow should be fed extra concentrates to challenge them to produce to its maximum. This challenge feeding will condition their digestive system to initiate lactation on a higher plane. Two weeks before calving start feeding 500g concentrate and increase 300 to 400g until the cow is consuming 500 to 1000g concentrate for every 100 Kg body weight. After calving increase the allowance by 500 g per day up to free choice level to support the early lactation milk increase.

Reproduction

Oestrous detection methods are simple and very important. Oestrous chart should be maintained in front of each and every cow. This should include the date of last calving, last insemination, expected next heat, type of hormonal treatment

employed and the present status. This looks cumbersome but this solves almost all the reproduction related problems. After two inseminations, the third oestrous should be handled with a treatment protocol. A simple, cost efficient progesterone impregnated vaginal device is now made available at Rs.110 per insert which results in significantly higher conception rates among repeaters. The body condition score gives an excellent status report, so that insemination or treatment protocol can be decided.

Udder care

Best udder hygiene should be maintained for which the expenditure is immaterial. High yielders are more prone to mastitis. Proper udder care methods are to be taught to farmers by hands on training and mastitis problems should be demonstrated to them. Use of sterile udder towels may be popularised for high yielders. Strip cup test and California mastitis test are simple and can be adopted by a farmer with least expenditure.

Health care

Periodical measurement of body weight by indirect methods, deworming, deticking vaccination and proper culling are the key factors decides the profitability of the farm. Annual culling rate of 25% should be strictly enforced to reduce the number of problematic cows and less producing cows.

Integrated dairy farming

Dairy farming can be integrated not only with poultry, fish and duck but also with few energy recovery methods namely bio-gas production and electricity generation through bio-gas power generators. Azolla cultivation and vermicompost technologies are proven methods but intensive and successful farmers are very few.

Value addition of milk

Value added milk products are now familiar with both farmers and consumers. Carrot flavoured milk, beet root flavoured milk, panner, butter milk are the products and can help the producers to earn more profit, if the marketing strategy is planned properly. The cost of production of each milk product should be worked out by the farmer for his conditions and a hand on experience is compulsory on these lines.