

## Original Research Article

### Economic Analysis of Gowshala (Dairy Farm) Banaras Hindu University

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#### ABSTRACT

##### Keywords

Farm inventory,  
Cost of production,  
Benefit-cost ratio

The secondary data were collected from the year 2012 to 2017 in farm inventory of dairy farm Banaras Hindu University. The study revealed that the cost of production is higher side then the income of farm. The farm will goes to the uneconomically because the expenditure was higher than the income of farm. The lowest benefit-cost ratio was in the year 2017 and highest in the year 2013.

#### Introduction

Livestock is an important source of farm animal protein for farm families through the consumption of milk, dairy products, eggs, and meat. In addition to their use as a source of food, livestock is also used for draught power in Agriculture and transport and their dung is used to help enrich soil fertility. Sales of livestock and livestock products make up a considerable proportion of the rural farmer's cash income.

Proper feeding is the basis of successful dairy operation since feed cost accounts for over half of the total cost of milk production i.e. over 60 percent. To attain optimum performance a balanced ration is essential. A shortage or imbalance in the supply of energy, protein, vitamins or minerals will

subject to the cow to nutritional stress resulting in metabolic disorder or decrease in milk production. Nutrients requirement depends largely upon milk yield, composition and cow weight with milk production having greater influence in the high producing dairy cow. The aim of work is to the analysis of the farm efficiency.

#### Materials and Methods

##### Characteristics and ownership of concerned dairy

The Dairy Farm, Institute of Agriculture Science, Banaras Hindu University, is a research and educational farms where various categories of animals are kept. The herd maintained in a line so that they provide a much relevant idea about the dairy farming to

the student about feeding, breeding, and other managerial practices that how dairy units could run under the scientific condition to get maximum output.

### **Management practice at the concerned unit**

Considering the role of routine management practices in influencing production and thus accuracy of observations, it was considered worthwhile to state at least the salient management practices carried out daily at the dairy for the upkeep of animals and at the meteorological observatory for taking and recording of observations during the period covered under this study.

### **Feeding**

All animals were maintained under identical conditions. Rations were given to the cows according to their body weight and milk production. While the roughages were given adlib, the concentrates were given in regulated doses according to a ration schedule.

Concentrate mixture contains 16-18 percent DCP and 75-78 percent TDN and was either procured from compound feed manufacturing companies but during the period under reference they were prepared out of the ingredient procured on the open market. This mixture usually contained Linseed/ground nut/ rapeseed cake(s), ground barley, arhar or gram chuni and wheat or Rice bran mixed in the ratio of; oil cakes 40 percent chunies 25 percent, brans 25 percent and 10 percent molasses. Amongst dry roughages wheat bhusa constitutes the major share of fodder throughout the year.

Green forage supplies are rather erratic. Only a limited quantity of any one of the other green forage, depending on its availability, is

made available. This too varies from season to season. While during summers and the rainy season the management makes efforts to raise Napier grass. Jawar Chari, N.P. Chari, green maize and cowpea, during the winters berseem and oats predominate constituting the bulk of green forage. Besides, the animals are provided with liberal quantities of common salt and trace mineral mixtures as per recommendations.

Most of the ration is provided to the animals through stall feeding. The animals however, one allowed grazing on scanty grass covers during monsoon and thereafter. The places of a called grazing are not any defined grazing grounds but mostly comprise campus playfields or roadsides where they hardly nibble vegetal cover except during the rainy season when the grass is more abundant and luxuriant.

All efforts are being made by the management to provide the animals with balanced feeds. Non- abundance and non-sustained supply of greens is a big bottleneck. Adequate supply of fresh, cool drinking water is available to the animals ad libitum with access at all times throughout the year.

### **Purchase of concentrate feeds**

The concentrate is either procured from the compound feed manufacturing companies or prepared locally after procuring needs full quantities of oil cakes linseed, Mustard, Groundnut and chuni (Arhar and gram chuni) and wheat branetc.

### **Housing system followed**

Housing system of dairy animals at the Banaras Hindu University is somewhat improved and scientifically planned. The sheds are covered by an asbestos sheet on both the sides with central rafts with half

walls all round. At the dairy farm, Institute of Agriculture Sciences, Banaras Hindu University, however, scant facilities i.e. fans, cooler etc. do exist.

### **Labour development practices**

The labour deployed at the Dairy Farm, Institute of Agricultural Sciences, Banaras Hindu University, is characterized as permanent and temporary.

Women are given due employment as labourers on the farms occasionally mainly for grazing the animals. All efforts are made to realize the skill of laborers.

Yet due to exigencies created at times interchanges of the labour force from one job to another become a necessity. Nevertheless, certain jobs viz.-milking, feeding etc. are allotted to persons fully conversant with the methods of feeding and milking.

In most of the month, work allotment is done in the morning around 6.00 A.M. for the entire day. It may, however, modify as per needs arising out of the intricate situation.

During monsoon season it was noted that the average number of labourers developed increase. This is due to accomplish various additional works viz. – green fodder harvesting, grazing, sowing and for exercising extra sanitary precaution etc. during the study it was observed that there is no specific type of training facilities given to the labour regarding the pattern and system of working. Most of the labourers are employed afresh and they learn by the dictates of senior labour through actual practices.

### **Calf rearing**

Calves were found to be raised both through weaning and suckling system. Under weaning

system, calves are separated from their dams just after birth colostrums/milk is allowed to them as per requirement and is fed out of pails.

In addition, minerals mixture is also provided to the weaned calves separately. After the age of one month, the calves were said to get stunned to feeding on soft leafy greens etc.

### **Paddocking and grazing**

The dairy farm building, which has taken under the study by the author, had brick wall paddocks for animals to move freely thereby getting the needful exercise to maintain their health.

Further, it was observed that most of the animals of this dairy allowed for grazing but not in the pasture which was found to be almost non-existent.

A major part of the ration is being provided at the stalls. The cows and buffaloes were mostly seen grazing by the roadside, where they could nibble scratchily grassed excepts during the monsoon season when access to green luxuriant grasses was ample. The cows and buffaloes especially those in milk were given balanced feed at most the farms including common salts.

### **Maintenance of Various Records**

All the cows and buffaloes at the dairy had their identification marks viz. the brand numbers of which were used for purpose of keeping records pertaining to these.

Milk yield from each time first in the daily milk sheet and then entered in the milk record register against the brand number of cow/buffalo and total of the day's milk yield from cows buffaloes were computed and entered from the aforesaid record.

After milking and recording both during morning and evening the milk is supplied to campus customers; whereas can supply is made by milkers against coupon system at the BHU campus. It is obvious that the system of management followed at the dairy were standard based on scientific pattern.

### **Collection of data**

The data were collected are based on the authentic records maintained at the Gowshala, (Dairy Farm), Institute of Agriculture Science, Banaras Hindu University.

The month- wise data were collected comprised of various parameters viz. monthly dairy herd statistics, quantity and quality of feeds and their cost, type of concentrate mixture including their brand name with cost, labour development practices and their remuneration, milk performance and the total milk production during investigation some information were also recorded with regards to the management practice followed at the dairy equipments, rearing and calves, grazing and paddock facilities method of breeding. The data were collected by manual by a direct visit to the farm.

### **Analysis of data**

The data were analyzed using the statistical methods and mathematical operation.

Farm conversion efficiency and Benefit-cost ratio.

$$BCR = \frac{\text{Gross Return (Rs.)}}{\text{Total cost of production(Rs.)}}$$

### **Net income**

$$NI(\text{Rs}) = \text{Gross return (Rs)} - \text{Total cost of production(Rs)}$$

## **Results and Discussion**

### **Economic analysis of feeds and feeding at gowshala (Dairy farm)**

#### **Benefit cost-analysis of farm**

The benefit-cost analysis of farm was analysis data were collected from the farm by the direct visit. The data were taken from the authentic register at the dairy farm Institute of Agriculture Science, Banaras Hindu University. The table 1: shows the income and expenditure of the farm from the year 2012 to 2017. It is clear from the table 1: the cost of the farm is higher from the income of the farm from the year 2012 to 2017 the benefit-cost ratio of the farm is negative and the farm is not economically from 2012 to 2017. Because the farm is not commercially working it is work as research and education purpose only. The cost of higher side than the return from the dairy farm. The table 1: shows the benefit-cost ratio of the farm was the ratio was 0.67, 0.75, 0.65, 0.73, 0.56, and 0.51 respectively from 2012 to 2017.

The farm is not economically beneficial and the efficiency of farm was low, Therefore, the cost of milk production was on higher side than the return from this dairy farm, because this dairy farm mainly meant for research and education purposes, not as a commercial dairy farm (Pandey *et al.*, 2017).

The cost of production is higher side then the income of farm. The farm will goes to the uneconomically because the expenditure was higher than the income of farm. The reason of low income of farm than the expenditure are mainly the farm is based to fulfill the requirement of research and education farm is not a commercial farm.

**Table.1** Income and expenditure of dairy farm during 2012-2017

Expenditure						Income				
Year	Feeding cost (Rs)	Labour cost (Rs)	Veterinary (Rs)	Electricity (Rs)	Total (Rs)	Selling of Milk (Rs)	Selling of Manure (Rs)	Selling of Animal carcass (Rs)	Others (Rs)	Total (Rs)
2012	7554162.5	1166034	35000	100125	8855321.5	5890619	25019	825	6650	5923113
2013	7479100	1209394	40000	115000	8843494	6538969	53090	825	18500	6611384
2014	9511032	1911566	45000	145000	11612598	7415605	66456	283	14017	7496361
2015	8610678	2550025	36000	155000	11351703	8232275	48471	655	12621	8294022
2016	10430137	3439110	50000	136000	14055247	7826905	60841	700	8120	7896566
2017	8732610	4772894	55000	160000	13720504	6955200	79002	565	19038	7053805

The lowest benefit-cost ratio in the year 2017 and highest in the year 2013. The highest expenditure at the gowshala in the year 2016 was 14055247 and lowest in the year 2013 was 8843494. The highest income from the farm in the year was 8294022 and minimum in the year was 5923113.

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