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Study on Animal Rearing Practices by Dairy Owners of District Jaipur Rajasthan

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Abstract

The present study was conducted at Krishi Vigyan Kendra Banasthali Vidyapith, Newai, Tonk, Rajasthan. 20 farmers were selected from five Villages are Palei, Akodia, Jujharpura, Bhanvati and Bahakava and Banasthali University, Newai tahsils of Tonk district of Rajasthan. PRA (Participatory Rural Appraisal) Tool was used for study. Management factors were effective because all parameters were managed by experts under dairy unit of Banasthali University, but dairy unit of Palei, Akodia, Jujharpura, Bhanvati and Bahakava villages was handled by untrained farmers. The village level dairy farmers need to be provided knowledge and skill through training (KVK) in scientific feeding & breeding practices.

Keywords: Effect, Rearing parameters, Dairy Farming**,** knowledge

Introduction

Livestock has become an integral part of all interventions aimed at reducing rural poverty and enhancing food and nutrition security. The dairy livestock owners who raise cattle and buffaloes are yet ignorant with scientific management practices. If feeding, breeding, health care and other management practices fit in proper operation, it would be possible to reach the desired level of milk production. Animal husbandry not only refers to the breeding and raising of animals for meat or to harvest animal products (like milk, eggs, or wool) on a continual basis, but also to the breeding and care of species for work and companionship. (Sharpley et al. 2003; Aillery et al. 2005; Farm Foundation 2006; Steinfeld et al. 2006), material salient for the practices of modern dairy production, including intensive/confinement, mixed and grazing-based operations, will be highlighted in this particular literature review. Specifically, this review will focus on research that characterized efforts at mitigating: i) the release of excess nitrogen and phosphorous from fertilizers, manure, and dairy wastes into soil and water systems, ii) the release of ammonia and other volatile gases from lagoon storage facilities, and iii) potential contributions to climate change in the form of greenhouse gas emissions. Terrestrial Applications of Fertilizers, Manure, and Dairy Wastes: Although nitrogen and phosphorous are nutrients essential for plant growth, problems arise when there is an excess of these nutrients available, particularly for aquatic ecosystems and groundwater supplies. Adding excess nitrogen and –in particular phosphorous to rivers, lakes, and streams can lead to an overgrowth of algae and a sharp decrease in the amount of oxygen available to other aquatic organisms (a process known as eutrophication). Summertime fish kills, the loss of oxygen-sensitive species from streams and lakes, and unsightly algal masses along shorelines are evidence of eutrophication of a particular water body (Aillery et al. 2005, Hoorman, et al., 2008).

In addition, the presence of nitrogen (in the form of nitrite or nitrate) in groundwater, as well as municipal and private water supplies (Schroder, et al., 2007, Toth, et al., 2006) can result in serious health issues if nitrogen levels are not reduced (Showers, et al., 2008, Bishop, et al., 2005). Raising dairy cattle –as with other forms of animal agriculture- can contribute excess nitrogen and phosphorous to soil and water systems in a variety of ways and at a variety of scales (Sharpley, et al., Agricultural Phosphorous and Eutrophication, 2nd Edition. 2003, Schroder, et al., 2007, Sharpley, et al, 2001, 2005) Keeping large numbers of animals on an individual farm, or within a particular watershed, can exceed the capacity of the surrounding

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land to absorb the nutrients contained in their excreta. The practice of importing feed, either to supplement milk production from a grass-based system or as full rations for confined animals further exacerbates these problems. The presence of pastured dairy cattle in or near water bodies can introduce nitrogen and phosphorous directly into aquatic ecosystems. If cattle are confined, then the spreading of liquid manure and dairy house wastes prior to heavy rainfall events can result in contamination as well (Nash, et al., 2000).

For intensively managed grazing operations, the injudicious application of fertilizer can be problematic in this way as well (Stout, W.L., et al., 2000, Nash, et al., 2000 and Owens and Shipitalo, 2006). The phosphorous content of cattle feed and/or the use of phosphorous supplements can result in manure with considerably higher phosphorous content than the VCA 2009 4 surrounding land can absorb, particularly if that manure is spread only in accordance with nitrogen standards (Rotz, et al., 2005). Each of these issues will be examined, with particular reference to intensive, pasture-based, and mixed dairy production systems as appropriate.

Livestock production systems can be defined based on feed source, as grassland-based, mixed, and landless (*Sere, et al, 1995*). As of 2010, 30% of Earth's ice- and water-free area was used for producing livestock, with the sector employing approximately 1.3 billion people. Between the 1960s and the 2000s, there was a significant increase in livestock production, both by numbers and by carcass weight, especially among beef, pigs and chickens, the latter of which had production increased by almost a factor of 10. Non-meat animals, such as milk cows and egg-producing chickens, also showed significant production increases. Global cattle, sheep and goat populations are expected to continue to increase sharply through 2050 (*Thornton, 2010*). Aquaculture or fish farming, the production of fish for human consumption in confined operations, is one of the fastest growing sectors of food production, growing at an average of 9% a year between 1975 and 2007 (*Stier, 2007).*

During the second half of the 20th century, producers using selective breeding focused on creating livestock breeds and crossbreeds that increased production, while mostly disregarding the need to preserve genetic diversity. This trend has led to a significant decrease in genetic diversity and resources among livestock breeds, leading to a corresponding decrease in disease resistance and local adaptations previously found among traditional breeds (*Ajmone-Marsan, 2010*).

Grassland based livestock production relies upon plant material such as shrubland, rangeland, and pastures for feeding ruminant animals. Outside nutrient inputs may be used, however manure is returned directly to the grassland as a major nutrient source. This system is particularly important in areas where crop production is not feasible because of climate or soil, representing 30 – 40 million pastoralists (Chrispeels and Sadava 1994).

Methodology

The area under this study is Tonk District, Rajasthan, which is located in Eastern part of the state between 75 0 07' 00" E to 760 19'00" E and 25 0 41' 00" N to 26 0 34'00" N. The total geographical area covered by the District is 7194 km^2. Location map showing the sampling sites is represented in figure 1. The climate of the area is semi-arid type. The average annual rainfall of the district is 598 mm. The area is having general flat to undulating topography. The Banas River, 135 km in length, is major one running through Tonk district (Sharma et al., 2015). For this study, we have selected dairy unit of cows (Indigenous and mixed breeds) Banasthali University and Palei, Akodia, Jujharpura, Bhanvati, Bahakava villages of Newai

Table 1: Parameters selected to dairy farmers for study

S. No.	Place	Parameters
1	Dairy unit of cows of Banasthali University	Floor typeHeight of shedRoof typeSoil typeSanitization and cleaningAnimal bathing Decompose of wasteTDS status in waterSoil pHWater pHStatus of soil born bacteria
2	Palei, Akodia, Jujharpura, Bhanvati, Bahakava villages	Floor typeHeight of shedRoof typeSoil typeSanitization and cleaningAnimal bathing Decompose of wasteTDS status in water Soil pHWater pHStatus of soil born bacteria

tahsils of Tonk district of Rajasthan. We used PRA (Participatory Rural Appraisal) Tool to analysis for this study. 20 farmers were selected from each village.

Results and discussion

It was cleared from the results Table 2 that the soil type was found sandy loam at the cow herd of Banasthali Vidyapith and Palei (832), Akodia (653), Jujharpura (706), Bhanvati (870) and Bahakava (1109) villages of Newai tahsils of Tonk district of Rajasthan.

It was cleared from the results Table 2 that the soil pH was found 7.05 at the cow herd of Banasthali Vidyapith and Palei (8.70), Akodia (7.90), Jujharpura (8.80), Bhanvati (8.30) and Bahakava (8.70) villages of Newai tahsils of Tonk district of Rajasthan.

It was cleared from the results Table 2 that the water pH was found 7.10 at the cow herd of Banasthali Vidyapith and Palei (7.40), Akodia (7.40), Jujharpura (7.50), Bhanvati (7.70) and Bahakava (7.70) villages of Newai tahsils of Tonk district of Rajasthan.

It was cleared from the results Table 2 that the TDS level in water was found 180 at the cow herd of Banasthali Vidyapith and Palei (832), Akodia (653), Jujharpura (706), Bhanvati (870) and Bahakava (1109) villages of Newai tahsils of Tonk district of Rajasthan.

Our results on soil quality are fully corroborated with Bolan et al. 2004 who have reported the farm effluent application generally increases pasture yield, although the response may be influenced by factors such as application rate, application method, application time (season), soil fertility, and climate condition.

Table 2: Status of dairy farming systems

S.No.	Place	Parameters	Poor	Medium	Good
1.	Dairy Unit of Banasthali University	Floor type	√	×	×
2.		Height of shed	×	√	×
3.		Roof type	×	×	√
4.		Soil type	×	×	√
5.		Cleaning status	×	√	×
6.		Animal bathing	×	×	√
7.		Waste decomposition	×	×	√
8.		TDS status in water	×	×	√
9.		Soil born bacteria	×	×	√
10.		Soil pH	×	×	√
11.		Water pH	×	×	√
12.		Ration Quality	×	√	×
13.		Milk Production	×	×	√
14.		Health Status	×	×	√
15.		Manure Management	×	×	√
1.	Dairy Unit of Palei, Akodia,	Floor type	√	×	×
2.	Jujharpura, Bhanvati and	Height of shed	√	×	×
3.	Bahakava villages	Roof type	√	×	×
4.		Soil type	×	√	×
5.		Cleaning status	√	×	×
6.		Animal bathing	√	×	×
7.		Waste decomposition	√	×	×
8.		TDS status in water	√	×	×
9.		Soil born bacteria	×	√	×
10.		Soil pH	√	×	×
11.		Water pH	√	×	×
12.		Ration Quality	√	×	×
13.		Milk Production	×	√	×
14.		Health Status	√	×	×
15.		Manure Management	√	×	×

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