Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 5, July, 2021: 4023-4028

Research Article

Production Traits Scenario within Unorganized Dairy Farms in Jaipur Region of Rajasthan

Jitendra Kumar Sharma*, Narendra Kumar Singh*, Rishabh Srivastav*
*School of Agriculture, Suresh Gyan Vihar University, Jaipur, Rajasthan, 302017, India.

Abstract

The goal of this research was to determine the many important production traits of dairy animals that influence dairy owners and dairy businesses in Rajasthan's Jaipur region. The primary data was gathered from 50 unorganized dairy farms in five districts of the Jaipur region: Alwar, Dausa, Jaipur, Jhunjhnu, and Sikar. The age at first calving, lactation duration, dry period, inter-calving intervals, lactation yield, and dry off time of milch animals were among the production traits investigated. These are economic indicators that represent the overall performance and features of a certain breed of animal. The study reveals that in the dairy farms of Jaipur region, the age at which the first calving was recorded was about 31, 35.2 and 42 months in cross bred/exotic cows, local cows and buffaloes respectively. Similarly, lactation Length was estimated to be about 289 days, 253 days and 296 days; the average dry period was recorded to be about 64 days, 86 days and 95 days; and the average calving intervals was about 377, 394 and 405 days. In conclusion, dairy owners should be encouraged to get skilled about understanding the scientific managerial practices to maintain the sound production traits status among their milch animals.

Keywords: Lactational Length; Dry Period; Production Trait; Calving Interval; Lactational Yield.

Introduction

Animal husbandry has developed as a significant economic activity of the rural people of Rajasthan, particularly in the arid and semi-arid areas. With the development in the field of livestock, there has been a reduction in the unemployment and poverty levels, so much so that the state collects a GDP of about 8% alone from livestock. NDDB report of 2018-19 reveals that 12.71% (22.42 MT) of total milk production came from Rajasthan (NDDB, 2019). The composition of lactating animal stock has shifted towards greater domination of the buffaloes and crossbred cows and gradual disappearance of local /indigenous cows. Between 1992 and 2012, in the Jaipur region itself, there has been an increase of 71.10% in the buffalo population and about 24.51% in the cow population (both local and indigenous). Before 2003, the cow stock largely consisted of local and indigenous cows in the state and region but the share of crossbred cows has increased drastically and population of local and indigenous cows declined due to poor production performance of our local cows.

In spite of increase in number of milch animals and total milk production over the years, productivity of milch animals is not very encouraging in the state. Making available the developed technologies and improved managerial skills for mass adoption are amongst the only ways to enhance the production potential of milch animals**.**

Even with the existence of various hurdles the management of production traits the Indian dairy enterprises has grown gradually and maintaining sustainable and consistent growth since after the white revolution in country (Kadirvel, 2002).

There have been a number of studies by various researcher (Aktürk, Bayramoğlu, Savran, & Tatlidil, 2010; Baba, Wani, & Zargar, 2011; Bardhan, Sharma, & Saxena, 2010; Bidwe, Chavan, & Padghan, 2009; Dhindsa, Nanda, & Kumar, 2014; Gaddi, Kunnal, & Hiremath, 1997; Gupta, Suresh, & Mann, 2008; Joshi, Tiwari, Roy,

& Dutt, 2019; A. Kumar & Singh, 2008; U. Kumar, Mehla, Chandra, & Roy, 2006; Taraphder, 2002; Thirunavukkarasu & Nedunchezhian, 2009) but in respect to some factors (that are directly affecting the dairying and dairy enterprise) it was felt that further studies are required in Jaipur region due to varied agro-climatic, social and economic condition of dairy owners in the study area thus present study was conducted in year 2017-218. These problems and hurdles, faced by the dairy owners to manage production trait in a better way, should be taken into consideration while formulation of strategies and policies for upliftment of dairy enterprises in the region and state.

Because milk production and reproductive success are tightly linked, understanding of milch animal production traits is essential for dairying evaluation. As a result, they have a direct and indirect impact on the performance of dairy businesses. The age at first calving, lactation duration, dry period, inter-calving intervals, lactation yield, and dry off time of milch animals are all significant production traits. These are economic indicators that represent the overall performance and features of a certain breed of animal. Keeping this in mind, the present study was conducted to ascertain these specific and important production traits perceived by dairy owners in five districts (namely "Alwar, Dausa, Jaipur, Jhunjhnu and Sikar") so that the findings could be used in upliftment of dairy enterprise in the region and state.

Material and Methods

1. Selection of the study area: The present research was carried out in the Jaipur Region of Rajasthan, in a large and developing dairy development region. All five component districts of the Jaipur region, namely Alwar, Dausa, Jaipur, Jhunjhnu, and Sikar, were chosen for primary data collection.
2. Sampling procedure: For selection of dairy farms, 10 dairy farms having more than 20 adult milch animals (cows and Buffaloes) from each district and tehsil (taluka) were randomly selected within the radius of 30 Kilometer from district head quarter.
3. Selection of the Dairy Farms and Collection of the data: For collection of primary data, all 50 dairy owners were considered as a respondent for collecting the information regarding the various production traits in practicing with pre tested and well-structured interview schedule.
4. Analysis of the data: The information through questions and observations related to production traits adoption by the dairy owners during animal husbandry practices was collected and analyzed in terms of percentage.

Results and Discussion

The production traits adopted by dairy owners in the Jaipur region as scientific management practices in efficient dairy farm operation the following important production traits were identified under the following heads:

1. **Age at first calving** - It was observed that late sexual maturity (puberty) of the heifers is one of the most important factor responsible for unprofitable nature of dairying. On the other hand, early maturity and thus calving of the milch animals, starts earlier repayment of investment made in rearing from birth to age at first calving. An earlier maturity would also extend and add to the production life years of milch animals. Thus age at first calving of the milch animals is of great economic significance to the milk producers as This trait has a significant impact on the cost of raising dairy cows, as well as their productive life and milk production. Managerial, hereditary, and environmental variables all influence the age at which a calving gives birth for the first time. With this in mind, the ages of different milch animals at first calving were recorded and shown in Table-1a.

Table 1a.Age at first Calving (in Months)

Districts	Cross breed/Exotic breed	Indigenous Cow	Buffaloes
Alwar	29	36	38

Dausa	32	34	42
Jaipur	28	33	41
Jhunjhnu	34	38	44
Sikar	32	35	45
Region Average	**31**	**35.2**	**42**

It was revealed that, there were no major differences in age at first calving among the dairy owners maintaining local cows and cross bred/exotic cows in the study area. However difference in age at first calving of buffaloes was observed. On an average the age at first calving for cross bred/exotic cows, local cows and buffaloes was 31, 35.2 and 42 months maintained in Jaipur region. No major difference was observed between age at first calving of milch animals and dairy farms operated in different districts of Jaipur region. This reveals that all dairy farms owners of Jaipur region paid their attention about the same extent in respect of quality of milch animals feeding patterns and care management practices.

2. **Lactation Length -** Milk production is used to evaluate the economic performance of dairy animals in general. The number of milking days has an impact on an animal's milk output. As a result, the duration of lactation has an impact on cattle owners. The Lactation Length of different milch animals was recorded and reported in Table-1b with this in mind. In the research region, the average lactation duration of cross bred/exotic cows, native cows, and buffalo was 289 days, 253 days, and 296 days, respectively.

Table 1b.Lactation -Length (Days)

Districts	**Cross breed/Exotic breed**	**Indigenous Cow**	**Buffaloes**
Alwar	285	260	303
Dausa	295	240	295
Jaipur	305	270	298
Jhunjhnu	288	240	287
Sikar	276	255	301
Region Average	**289.8**	**253**	**296.8**

Among the different dairy farms operating in the various district of the area, the maximum difference was recorded 29 days, 30 days and 16 days for cross bred /exotic cows, local cows and buffaloes respectively which reveals that milch animals maintained of different breeds in the study area were having the nearly similar lactation length.

3. **Dry periods -** The extended dry season would put cow keepers at a distinct disadvantage since dairy animals must be fed and cared for during this time, even if it is unproductive. As a consequence, the fixed cost of producing milk rises, but profit margins fall. The dry period intervals of different milch animals were recorded and reported in Table-1c with this in mind. In the research region, the average dry time for cross-bred/exotic cows, indigenous cows, and buffaloes was 64 days, 86 days, and 95 days, respectively. In contrast to cross-bred/exotic cows, the dry period in local cows was approximately 22 days longer.

Table 1c.Dry Periods (days)

Districts	**Cross breed/Exotic breed**	**Indigenous Cow**	**Buffaloes**
Alwar	65	94	98
Dausa	62	78	92
Jaipur	58	72	88
Jhunjhnu	64	95	103

Sikar	72	92	98
Region Average	**64.2**	**86.2**	**95.8**

it can be can be concluding that that in respect of dry period cross bred/exotic cows are more economical in comparison to the local cows and buffaloes. Among various dairy farms operated in the different districts of study area maximum about 14 days, 23 days and 65 days difference was recorded in dry period for cross bred/exotic cow, local cows and buffaloes.

4. **Inter-calving periods (Calving intervals) -** The service period and the gestation period are the two components of the inter-calving interval, which is the time between two consecutive calvings. A short inter-calving time results in more lactations throughout the milch animals' productive lives, resulting in increased milk sales revenue. The calving intervals of different milch animals were recorded and reported in Table-1d with this in mind. Cross-bred/exotic cows, native cows, and buffaloes had average calving intervals of 377, 394, and 405 days, respectively.

Table 1d.Inter- calving intervals (days)

Districts	Cross breed/Exotic breed	Indigenous Cow	Buffaloes
Alwar	378	390	416
Dausa	385	405	411
Jaipur	368	388	398
Jhunjhnu	370	399	402
Sikar	387	389	399
Region	**377.6**	**394.2**	**405.2**

It was observed that no major difference was observed in inter-calving interval for various milch animals among the dairy farms functioning in the study area.

Conclusion, Future Prospective and Implications

It was concluded that for the successful and profitable management of dairy enterprise, dairy owners needs not only proper skills and knowledge about these important production traits but they are also supposed to adopt them at their dairy farms. It was estimated that on an average the age at first calving for cross bred/exotic cows, local cows and buffaloes was 31, 35.2 and 42 months maintained in Jaipur region. No major difference was observed between age at first calving of milch animals and dairy farms operated in different districts of Jaipur region. Similarly, the average lactation length of cross bred/exotic cows, local cows and buffalo was recorded about 289 days, 253 days and 296 days respectively in the study area. Among the different dairy farms operating in the various district of the area, the maximum difference was recorded 29 days, 30 days and 16 days for cross bred /exotic cows, local cows and buffaloes which reveals that milch animals maintained of different breeds in the study area were having the nearly similar lactation length.

The study concluded that the average dry period of cross bred/exotic cows, local cows and buffaloes was recorded about 64, 86 and 95 days. Dry period in local cows was about 22 days more in comparison of cross bred/exotic cows. Therefore, it was concluded that in respect of dry period cross bred/ exotic cows are more economical in comparison to the local cows and buffaloes. Among various dairy farms operated in the different districts of study area maximum about 14 days, 23 days and 65 days difference was recorded in dry period for cross bred/ exotic cow, local cows and buffaloes. In the Jaipur region average calving intervals of cross bred/exotic cow, local cows and buffaloes were about 377, 394 and 405 days respectively. Further, it was observed that no major difference was observed in inter- calving interval for various milch animals among the dairy farms functioning in the study area.

Thus, therefore looking to present and existing production traits status in the region huge opportunities and chances of improvements are still available because dairy owners are not utilizing the existing potentials of their

livestock as per the scientific parameters, standard and recommendations of obtaining maximum productivity from livestock. Future Prospective and Implications includes:

1. Under the extension plan there should be a special provision to impart frequent technical training and new developed researches to dairy farmers in the study area which can be further extended abroad. The owners concerned in their day-to-day life based upon judicious assessment and enhancement of their skills to address the importance of production traits and problem and threats faced by them during domestications of productive milch herds such as animal health care and disease control, care and management of animal, reproduction and breeding and management of animal, nutrition and feeding and management of animal and clean milk production etc.
2. There is imperative need to establish at least one Artificial insemination and well equipped breeding centers at Gram panchayat level to provide regular and timely services as per the need.
3. To increase the population of pure breed indigenous cow and even cross breed varieties, there is a requirement of good quality pure breeds at a large level. Grading-up of breeding plans needs to be undertaken at a mass level through proper accountability by incentivizing and motivating various agencies and NGOs associated in cattle breeding and development programs.
4. Efforts should be made to supply of sufficient financial assistance to high yielding milch animals and to adoption of recommended management practices.

Acknowledgements

I am grateful to the Prof. (Dr.) Sushil Kumar Sharma, for providing support to conduct academic research at SGVU, Jaipur, Rajasthan, India. I also thank to the principal, School of Agriculture and Management of SGVU for continuous support and motivation during the work for providing facility.

Conflicts of interest

The authors declare that they have no conflict of interest.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Aktürk, D., Bayramoğlu, Z., Savran, F., & Tatlidil, F. (2010). The Factors Affecting Milk Production and Milk Production Cost: Canakkale Case-Biga. *Kafkas Üniversitesi Veteriner Fakültesi Dergisi*, *16*(2), 329-335.
2. Baba, S. H., Wani, M. H., & Zargar, B. A. (2011). Dynamics and Sustainability of Livestock Sector in Jammu & Kashmir. *Agricultural Economics Research Review*, *24*(1), 119-132. https://doi.org/10.22004/ag.econ.109427.
3. Bardhan, D., Sharma, M. L., & Saxena, R. (2010). No Title. *Indian Journal of Animal Sciences*, *80*(6), 584-589.
4. Bidwe, K. U., Chavan, S. D., & Padghan, P. V. (2009). Studies on breeding management practices followed by the buffalo owners of Buldana district of Maharashtra. *Indian Journal Of Animal Research*, *43*(1), 71-74.
5. Dhindsa, S. S., Nanda, R., & Kumar, B. (2014). Problems and constraints of dairy farming in Fatehgarh Sahib district of Punjab. *Progressive Research*, *9*(1), 250-252.
6. Gaddi, G. M., Kunnal, L. B., & Hiremath, G. K. (1997). Factor affecting milk production: An inter technology analysi. *Karnataka Journals of Agricultural Science*, *10*(4), 1139-1143.
7. Gupta, D. C., Suresh, A., & Mann, J. S. (2008). Management practices and productivity status of cattle and buffaloes in Rajasthan. *Indian Journal of Animal Sciences*, *78*(7), 769-774.
8. Joshi, P., Tiwari, R., Roy, R., & Dutt, T. (2019). Significance of Badri cattle in rural household of Uttarakhand hills. *The Indian Journal of Animal Sciences*, *89*(3), 314-318.

9. Kadirvel, R. (2002). Limited Investment But Consistent Growth. *The Hindu Survey of Indian Agriculture*, 147-150.
10. Kumar, A., & Singh, D. K. (2008). Livestock Production Systems in India: An Appraisal Across Agro-Ecological Regions. *Indian Journal of Agricultural Economics*, *63*(4), 577-597.
11. Kumar, U., Mehla, R. K., Chandra, R., & Roy, B. (2006). Studies on managemental practices followed by the traditional owners of Sahiwal cows in Punjab. *Indian Journal of Dairy Science*, *59*(2), 100-105.
12. NDDB. (2019). *National Dairy Development Board - Annual Report 2018-19.* Retrieved from https://nddb.coop/sites/default/files/NDDB_AR_2018_19_Eng.pdf.
13. Taraphder, S. (2002). *Genetic and economic evaluation of Murrah buffaloes for lactation disorders and disposal pattern. Ph.D. Thesis.* NDRI (Deemed University), Karnal, India.
14. Thirunavukkarasu, P., & Nedunchezhian, M. (2009). Economics of livestock enterprises in different farming systems - a case study. *Tamilnadu J. Veterinary & Animal Sciences*, *5*(6), 228-232.