Indian Journal of Animal Sciences **88** (8): 977–978, August 2018/Short communication

Economics of Badri cattle rearing in Uttarakhand

PRAGYA JOSHI[1], RUPASI TIWARI[2], TRIVENI DUTT[3] and PUSPENDRA KUMAR SINGH[4]

ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh 243 122 India

May Received: 10 March 2017; Accepted: 7 May 2018

Key words: Badrinseminationi cattle, Economics, Net profit, Uttarakhand

Badri cattle has been registered as the first cattle breed of Uttarakhand by the NBAGR, Karnal. Badri cattle are available in hilly areas of Uttarakhand and are small in size, weighing between 200–250 kg, having small, straight legs with hard foot pad and hooves and varied body colours – black, brown, red, white or grey. These are well adapted to the hilly terrain and climatic conditions, comparatively more resistant to diseases (Pundir *et al.* 2014) and can play significant role in development of Uttarakhand as a real organic state (Banga *et al.* 2005). Estimated population of the breed is 16 lakhs. Badri cattle is used for milk production as well as draught purpose in mixed farming system practiced in Uttarakhand. But after all these advantages of the Badri cattle rearing, there is 20.4% decrease in indigenous cattle population from the previous census.

The study was purposively conducted in hills of Uttarakhand as Badri cattle has been registered as the first certified cattle breed of the state. Among all the districts, two highly cattle populated districts from the Garhwal and Kumaun commissionaires i.e Pauri Garhwal and Almora were selected purposively for the study. The population of indigenous cattle has its highest proportion present in Pauri Garhwal (17.80% i.e. 2,69,994) followed by Almora (11.5% i.e. 1,97,326) district (19th Livestock Census). From each district, two blocks were selected for the study and from each block, three villages were selected for the study, making a total of 12 villages. Selection of blocks and villages was done randomly. For the study, 10 respondents from each village i.e. 60 respondents from each district making a total of 120 respondents having two Badri cattle with a minimum of two years of experience were selected randomly. The data was collected through semi structured interview schedule. Production performance value for each respondent was calculated by taking the average milk yield (litre/day/cattle) of each cattle with the respondents.

Net profit was measured by subtracting the total expenditure on rearing of Badri cattle from total return from its rearing. To find out the net profit generated through Badri cattle rearing, the procedure followed is explained below.

The inputs used in dairy farms for milk production can be classified as fixed and variable cost. The value of each input was added together to determine the fixed and variable cost for each animal.

The relevant components of fixed cost included in milk production were interest and depreciation on fixed capital. The value of animal and cattle shed was taken to work out interest. The interest on working capital was not taken into consideration as the households get income from milk every day. The interest rate on cattle and cattle shed was worked out @ 12.5% per annum considering the prevailing interest rate of various banks. The depreciation on cattle shed and dairy equipments was worked out by using straight-line method considering their useful economic life. The depreciation on milch local cows was charged @ 8.34%, assuming a productive life of 12 years.

Variable costs included those recurring components in milk production, which are incurred on feed, labour and miscellaneous expenses.

Annual gross return from dairy was worked out by taking into account of annual return from milk, draught and dung. Return from milk was worked out by multiplying milk production per household with average milk price received. The average selling price of milk was ₹ 35/litre of milk. The value of the dung was determined by the prevailing rate i.e. ₹ 500 per tonne. The value for draught power of bulls was taken as ₹ 400/day of ploughing as responded by cattle owners.

Majority of Badri cattle owners are marginal and landless farmers and are rearing the cattle with an idea of religious importance. The average total expenditure, total return and net profit per year through the Badri cattle was ₹ 19,072±590.85, ₹ 20,051±792.2 and ₹ 979.3±200.9 respectively. Average milk production/day, lactation length, dry period and calving interval were 1.6±0.7 litres/day, 11.78 months, 1.9±0.7 months and 13.72±1.9 months respectively. Lower average net profit earned through Badri cattle indicate that rearing of Badri cattle is not profitable for farmers. The low net profit earned through Badri cattle rearing is due to low milk yield/day/cow which ranged between 0.5–3.0 litres. Among Badri cattle owners, majority (41.70%) of respondents revealed that average milk yield

Present address: [1,4]Ph.D Scholar (joshi.pagga@gmail.com, puspendra2001@gmail.com), Extension Education Division; [2]Principal Scientist & I/C ATIC (rtiwarirupasi@gmail.com), [3]Joint Director and Dean (triveniduttivri@gmail.com).

of cattle is between 1.34–2.17 litre/day followed by 0.5–1.33 litre/day (37.5%) and 2.18–3.00 litre/day (20.8%). The low milk production of Badri cattle can be increased by improving the nutrition availability to the animal, using good pedigreed bull and preserving the semen of elite bull as well as conducting research on different managemental and nutritional requirements of the Badri cattle. This indicates a lack of business sense among the respondents as they are rearing the cattle for religious and sentimental values. A proper guidance and better managemental practices followed for Badri cattle can lead to a profitable rearing from non profitable one. Majority of respondents (46.7%) were earning no profit from rearing of Badri cattle followed by low (29.2%), medium (19.2%) and high (5.0%) profit. There was no significant difference between the two districts with respect to net profit. These results were not similar to that obtained by Singh *et al.* (2017) in Gangatiri cattle where majority of respondents had medium net profit from rearing the cattle with average net profit of ₹ 1984. Rahman (2011) in his study on dairy based self help group in Asom reported that majority of non members had low net profit from rearing indigenous cattle with an average of ₹ 1414.

Total fixed cost and variable cost was 19.3% and 80.7% of total expenditure. Labour cost is actually not incurred as the labour is mostly family labour so 49.2% of total cost incurred can be neglected which will increase the net profit earned through the cattle. This shows that even with minimal care and management, Badri cattle is giving some profit. The net profit earned through the Badri cattle has a scope for improvement, performance parameters of the cattle is needed to be improved and the marketing facilities in the study area should be facilitated. Most of the respondents rearing Badri cattle were marginal farmers. They can't afford animal with high maintenance cost, so it is better to improve the performance of Badri cattle which is reared under low input production system under semi-intensive farming. In spite of low/no input alongwith minimum management interventions, Badri cattle is able to produce and survive. Therefore with suitable scientific interventions and measures taken by government like selective breeding, semen preservation of elite Badri bulls, popularizing AI practices by using the semen of better producing Badri bull, identifying elite bull for natural service, studies on fodder and maintenance requirement of Badri cattle; productivity per animal can be increased. The other area to focus upon is to improve the knowledge level of farmers through enhancing linkages with formal information sources as well as providing them better access to resources and improving their social participation which can improve the overall rearing and management practices. Badri cattle being the newly registered breed has to be conserved and the best way to facilitate its rearing among the farmers is to increase the profit earned through it which will directly help in improving the socio-economic condition of the farmers that will motivate them for rearing the breed.

SUMMARY

Badri cattle has been registered as the first cattle breed of Uttarakhand. The cattle is mainly reared by marginal and landless farmers so it's profitability and production performance are important aspects for conserving the breed and for improving economic condition of the farmers. The present study was, therefore conducted to study the net profit through Badri cattle rearing which will help in policy formulation and identification of remedial measures to conserve the cattle and increase profit earned through it. This study was conducted in 12 villages from 2 blocks of Almora and Pauri Garhwal District each by personally interviewing 120 Badri cattle owners through semi structured interview schedule. The average total expenditure, total return and net profit per year through the Badri cattle was ₹ 19,072±590.85, ₹ 20,051±792.2 and ₹ 979.3±200.9 respectively. Average milk production/day, lactation length, dry period and calving interval were 1.6±0.7 litres/day, 11.78 months, 1.9±0.7 months and 13.72±1.9 months respectively. In conclusion, net profit earned through cattle revealed that the improvement in milk yield, agricultural practices and marketing facility are required to improve the net profit earned through cattle to turn it towards a profitable business.

REFERENCES

19th Livestock Census. District Wise Report 2012. Retrieved from www.dahd.nic.in. Retrieved on 28–10-2016.

Banga R K, Kumar P, Singhal L K, Sharma A and Chauhan R S. 2005. Red hill cattle is characterized as 'Badri cow' based on physical characters and body measurements. *The Indian Cow: The Scientific and Economic Journal* **2**(3): 10–14.

Pundir R K, Singh P K, Sharma D, Kumar S, Tiwari R, Singh C V and Prakash B. 2014. Characterization and evaluation of hill cattle of Garhwal region of Uttarakhand, India. *Indian Journal of Animal Research* **48**(4): 322–28.

Rahman S. 2011. 'Sustainability of dairy based self help groups (SHGs) Assam: an exploratory study in Kamrup district.' Ph.D. Thesis, Submitted to NDRI, Karnal.

Singh P K, Sankhala G and Singh P K. 2017. Performance of Gangatiri cattle rearing in field condition. *International Journal of Livestock Research* **7**(3): 142–48.