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Managing Feed Use Efficiency in Peri-Urban Dairy Herds in Pakistan

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Abstract

Dairy farming is an important activity for many urban dwellers in Asia who try to serve the increasing urban demand for milk of the growing urban population. During 12 months, data on demographic events, types and amounts of feeds offered, milk offtake and body weight changes were collected in 15 mixed buffalo and cattle dairy herds in Faisalabad, third largest city of Pakistan. The farms were semi-commercial small-scale mixed (SSM), semi-commercial small-scale dairy (SSD) and commercial small-scale dairy (CSD); their animals were mainly stall fed. Regularly collected samples of feeds offered were analysed for their nutrient composition. The offer of feed dry matter and crude protein were significantly different ($p < 0.05$) between the three production systems across the four seasons of a year. The overall average body weight of female adult buffaloes and cattle was 579 kg (480–807) and 434 kg (339–630), respectively. Daily milk production (corrected to 4% fat) per animal was 13.5 liters in buffaloes and 8.1 liters in cattle; while milk extracted for sale from buffaloes varied ($p < 0.05$) between seasons for the SSD and CSD production system, this was not the case in cattle. On a yearly basis, buffaloes received approximately 0.6 kg and 0.7 kg DM less roughage feed per day on SSM and CSD farms than on SSD farms. Gross margin of selling milk and occasionally young stock and culled females was higher on SSM and CSD farms than on the resource poor SSD farms, whereby the only variable costs accounted for were those of feed. It was concluded that more efficient feed utilisation in the studied dairy production systems is possible through separate feeding of groups of buffaloes and cattle, respectively, according to physiological and productive needs, and countering feed shortage periods with adopting silage making.

Keywords: Buffalo, cattle, energy balance, gross margin, milk production