

Driving smallholder farm practice change in Pakistan through an extension supported calf-rearing competition

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More than six million male buffalo and cow calves are born annually in Pakistan (Hasnain and Usmani, 2006). Smallholder farmers tend to neglect their young calves due to high feeding cost and low farm return rate which results in to poor calf growth rates (~150 g/day) and high mortality rates at weaning (Bhatti et al., 2009). These become major constraints in accelerating the smallholder farming production and profit.

The aim of this study was to improve farmers' knowledge and drive on-farm practice change to support better rearing of buffalo calves in the smallholder dairy farming system of Pakistan. A total of 33 smallholder farming families from three villages in Punjab ($n=17$) and three villages of Sindh ($n=16$) were engaged in extension training on calf care and participated in a buffalo calf rearing competition. Each farming family reared one calf ($n=33$) from birth to approximately ten weeks of age and maintained calf management, health, feeding and weight records (in presence of local judges). The competition was used to motivate farmers to challenge their traditional calf rearing practices. Furthermore, the extension training supported farmers in building capacity about managing their on-farm resources and included recommendations such as offering *ad libitum* colostrum at birth and increasing milk being fed. This extension program was used as a basis for creating interest of the whole family to be involved in growing calves well by engaging in good feeding practices.

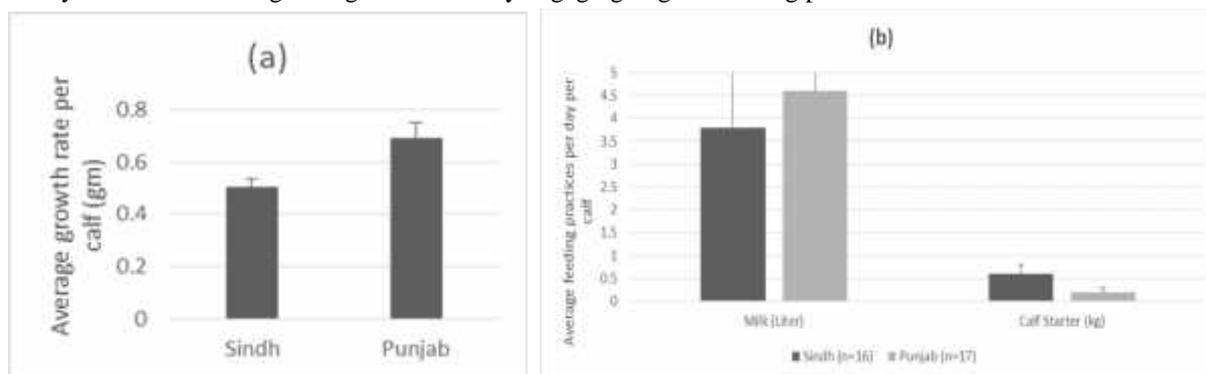


Figure 1: Growth and feeding practices (a) Average growth rate and (b) feeding practices which offered in Sindh and Punjab province of Pakistan.

Farmers do not offer any concentrate and feed more milk to calves which increases their cost of production. Feeding practices results shows that the average milk fed from birth to average day 76.5 in Sindh and day 74 in Punjab was 3.8 ± 0.2 litres and 4.6 ± 0.3 litres per day per respectively (Fig b). All calves were also offered free access to water which is not a common practice in these systems. Some farmers also offered additional feed including calf starter (wheat crush) and green fodder, data shows that Punjab farmers generally offered on average less concentrate than farmers in Sindh (0.6 ± 0.2 gm vs 0.2 ± 0.1 gm per day per calf) (Fig b). The average calf growth rates in Sindh and Punjab were 0.504 ± 0.03 and 0.689 ± 0.06 per day per calf respectively (Fig a) because the high growth rate was observed in Punjab due to more milk as compared to Sindh. The average cost of feeding was also higher in Punjab which was Rs. 312.8 ± 23.2 per day per calf as compared to Sindh Rs. 260.7 ± 14.2 .

This paper concludes that to engage farmer innovatively like conducting on-farm calf competition helped to motivate the farming communities to achieve calf weights of three times to four times the reported average for smallholder farmers in Pakistan. The improvement in calf growth rates provides an opportunity for farmers to reach better market opportunities.

References

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