

ON-FARM EVALUATION ON PRODUCTION PERFORMANCES OF LACTATING CROSS BRED JERSEY COWS PROVIDED WITH EFFECTIVE MICROORGANISMS

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Effective microorganisms (EM) can improve the digestion and increase the production performances of dairy cows. Therefore this study was conducted to evaluate the effect of EM containing *Lactobacillus* spp. on production performances of cross-bred Jersey cows in dry zone of Sri Lanka. The study was conducted in a small scale farm at Saliyapura, Anuradhapura. Product was used in two forms; liquid and powder each containing 1×10^7 cfu/mL and 1×10^7 cfu/mg of *Lactobacillus* spp. respectively. The experiment was conducted in a Complete Randomized Design with three replicates. Six, cross-bred (Jersey \times Sahiwal) milking cows were randomly assigned to the control and treatment groups. Animals in treatment group were daily given EM after the milking. Milk volume, fat and solid non-fat (SNF) content in milk of each cow were measured daily. Body weights of cows were measured once in two weeks. Body condition scoring (BCS) and proximate analysis of cow dung of each cow were done at the beginning and end of the study. Cow dung of each cow was visually observed daily. Data were analyzed using two sample t-test procedure and two sample Wilcoxon rank sum test in Minitab. Higher average milk volume was observed in animals provided with EM ($p < 0.05$). However, higher milk fat contents were observed in animals in control group ($p < 0.05$). Solid non-fat content in milk was not significantly different ($p > 0.05$) between control and treatment groups. Body condition score of animals in both groups were similar ($p > 0.05$). Further, less unpleasant odour and fewer amounts of undigested feed materials were observed in cow dung of animals provided with EM. Therefore, results revealed that supplementing *Lactobacillus* spp. increases the milk volume of Jersey \times Sahiwal cross-bred dairy cows. Though, fat and SNF content in milk are not increased, negative environmental impacts could be minimized, by providing EM to lactating dairy cows in dry zone.

Keywords: Cow dung, Dairy, Effective microorganisms, Feed, *Lactobacillus*