Comparison of Effect of Different Starter Cultures on Fermentation Properties of Cow Curd

Madhuwanthi P.G.N.P., Deshapriya R.M. C.*, Aththanayaka W.A.S.B.[1] and Disanayaka L.M.J.N. K.
Department of Animal Science,
Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka

Curd is an extensively consumed traditional fermented dairy product in Sri Lanka. The repeated usage of defined starter culture in commercial curd production leads to a constant host for bacteriophage proliferation. These bacteriophages cause the low rate of lactic acid production during fermentation process which causes undesirable product quality, thereby considerable economic losses. Rotation of the starter culture has been identified as a good solution to avoid this. Therefore, this study was conducted with the objective of identifying the suitable starter cultures/culture combination for cow curd preparation that can be used for culture rotation process. The physiochemical, microbiological and organoleptic properties were evaluated to identify the most suitable starter cultures for cow curd production. Four starter cultures; Delvo FVV 211 (T1), Chr Hansen YoFlex® SLB 3.0 (T2), Sacco KD2 (T3) and a combination of Delvo FVV 211 + Sacco KD2 (T4), as a control a culture of pre-prepared buffalo curd (PPBC) was used (T5). One way ANOVA and Friedman test were used to analyze data. The curd produced with Delvo FVV 211 showed the lowest ($P<0.05$) mean pH (3.64±0.00) compared to the control (3.94±0.02) toward 14th day of storage in refrigerator (4C^{O}). The organoleptic properties were evaluated by twenty untrained panelists with 5-point hedonic scale. The curd produced using a combination of Delvo FVV 211 + Sacco KD2 (T4) received the highest rank for taste while other properties had no difference. The control showed a higher ($P<0.05$) mean yeast count (2.90±0.08 log cfu/g) during the fifteen days of storage in refrigerator. However there was no significant mold growth in any of the sample during storage. In conclusion, a combination of Delvo FVV 211 + Sacco KD2 cultures was identified as the best option for culture rotation practices in cow curd production.

Keywords: Cow curd, Starter cultures, Organoleptic properties

[1]Milco (Pvt) Limited, Gallella, Polonnaruwa, Sri Lanka
*cdeshapriya@agri.pdn.ac.lk