



Novel starter cultures for meat and meat products (dry sausages) and their shelf stability

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Abstract:

The purpose of this study was to select the suitable bacterial strains for use as a starter culture for producing fermented meat products. *Micrococcus roseus* (MTCC-1532), *Lactobacillus plantarum* (MTCC-1407 and L-89) and *Pediococcus acidilactici* (NCIM-2292 and NCIM-2293) were examined for their ability to grow in the presence of sodium chloride, sodium nitrite, sodium nitrate and at different temperatures. Their ability to ferment different carbohydrate was also assessed. These hurdles were used alone and in combination. *M. roseus* (MTCC-1532), *L. plantarum* (MTCC-1407) and *P. acidilactici* (NCIM-2293) were able to grow well at 13°C and 16°C in the presence of 3% NaCl, 0.12% sodium nitrite and 0.08% sodium nitrate indicating their suitability as starter cultures for production of dry fermented sausages with the blend of Pork and Buffalo meat. Good quality dry sausages were prepared by ripening them at controlled temperature with selected pure bacterial cultures *L. Plantarum* (MTCC-1407) + *P. acidilactici* (NCIM-2293) + *M. roseus* (MTCC-1532) in equal proportion. Dry sausages are shelf stable fermented meat products which remain safe and stable without refrigeration. They are well suited to the Indian climate and take care of several health hazards associated with most of the meat and meat products. Good quality dry sausages were prepared by ripening sausages at controlled temperature with a selected combination of pure bacterial cultures *L. plantarum*, *P. acidilactici* and *M. roseus* in equal proportion. These starter cultures effectively inhibited the growth of *S. aureus* and Coliforms. The count of Lactic acid bacteria (LAB) and Micrococci was found to be higher in the sausages prepared by using above mentioned starter cultures. The Coliform count of fresh meat used for making sausages was 6.47 log cfu/g which reduced on 10th day to a level of 2.95 log cfu/g in sausage made with starter cultures.

Biography:

Mufti Dr Rajkumar Berwal, Assistant Professor-cum- Of-



ficer In-charge completed his B.V.Sc. & A.H. (1992) and M.V.Sc. (1995) from CCS Haryana Agricultural University, Hisar. He completed his PhD in Livestock Products Technology as an in-service candidate from Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar (Haryana). He has more than 22 years experience in the Department of Animal Husbandry, Teaching, Research and Extension in the area of Livestock Products Technology. He worked as Senior Veterinary Officer (Deptt. of Animal Husbandry, (Rajasthan Govt.) and Assistant Professor at Postgraduate Institute of Veterinary Education and Research (PGIVER) Jaipur. There, he has hold various responsibility as Academic Co-ordinator Of AHDP, UG, PG and PhD programme and In-charge of Department of Livestock Products Technology and Deptt. Of Veterinary Public Health, worked as Asstt. Professor in the Department of Livestock Products Technology and Principal Investigator of State govt. funded project "Centre for Organic Animal Products Technology" in the College of Veterinary and Animal Science, Rajasthan University of Veterinary and Animal Sciences - Bikaner. Presently he is working as Officer in- charge, Veterinary University Training and Research Center - Suratgarh, Sriganganagar under Rajasthan University of Veterinary and Animal Sciences - Bikaner..

Publication of speakers:

1. Kumar, V., R.K. Berwal and M.L. Choudhary, 2016. Feeding practices of goat rearers across flock size in North West semi-arid region of Rajasthan. *Int. J. Applied Res.*, 2: 807-810.

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