

Colostrum is a Novel Source of Probiotics: A Study on Potential Probiotic Properties of Bacteria Isolated from Colostrum of Sri Lankan Dairy Cattle

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The development of functional foods that contain probiotics are popular in the world due to their health benefits. Instead of consuming medicinal drugs, many people tend to use these functional foods to prevent them from diseases. Many sources of probiotics are used in the food industry. Rather than using traditional sources of probiotics, scientists tend to identify novel sources of probiotics. The current study was conducted with the aim of identifying the lactobacilli species present in the colostrum of Sri Lankan dairy cattle as a source of probiotics. Cow colostrum samples were collected from ten selected dairy cattle farms under sterile conditions in order to isolate lactobacilli species. The identities of the isolates were confirmed by cultural, biochemical and physiological tests. Grouping of lactobacilli isolates were carried out using five biochemical tests and two physiological tests. Evaluation of the probiotic properties were studied by bile tolerance, acid tolerance and antibiotic sensitivity tests. Of the total isolates, 43% were confirmed as lactobacilli. Among the lactobacilli isolates, 93% were able to grow vigorously at 45 °C, while 47.5% tolerated NaCl up to 6.5% (w/v). All the lactobacilli isolates shown acid (pH =3.00 for 3 hours) and bile (0.3% for 4 hours) tolerance and none of the isolates had shown resistance against selected antibiotics, such as amoxicillin, chloramphenicol, gentamicin, tetracycline and erythromycin. It can be concluded that the lactobacilli isolated from cow colostrum from Sri Lankan dairy cattle are a good source of probiotic bacteria and further studies are needed to identify their ability to exert clinically documented health benefits.

Keywords: Probiotics, Cow colostrum, Lactobacilli, Sri Lankan dairy cattle