Enterococci in food fermentation – phenotypic and functional characteristics


Federal Research Centre for Nutrition, Karlsruhe, Germany

Selected results will be presented from research within the framework of the EC-Project FAIR 96-3078 'ENTEROCOCCI IN FOOD FERMENTATIONS – FUNCTIONAL AND SAFETY ASPECTS'. Among the objectives the taxonomic relationships between enterococci of food, veterinary and clinical origin and the functional properties of the selected strains will be studied. This information is expected to enable a scientifically founded safety assessment of food products obtained by fermentation in which enterococci form part of the population.

Enterococci comprise a significant portion of the normal gastrointestinal flora of humans and animals. Their ability to adapt to other environmental conditions enables them to emigrate into different organic biotopes, such as plant materials, meat, milk and further food products as well as into human and animal waste water. In contrast to their 'status' as 'indicator' organisms for faecal contamination, certain strains are traditionally involved in cheese and silage fermentation, and other are even applied in probiotic products for humans and in animal husbandry. Enterococci are known to possess a number of transmissible antibiotic resistance genes. In fact, they have become increasingly important in nosocomial infections because of the rapid emergence of resistance to glycopeptide antibiotics such as vancomycin. These and other features are being studied in relation to the association of particular strains with foods and food fermentations.