Keeping the good bacteria alive in new probiotic foods

Scientists in the EU-funded PROTECH project investigated how beneficial probiotic bacteria can be protected during processing and storage of foods. Protection of probiotics is important because they have to be viable in the product, so that the consumers can benefit from their health effects.

Spray-drying would be an ideal technique for production of dry probiotic preparations, since it has high processing rates and low operating costs. However, it often reduces the cell viability dramatically. Spray-drying survival and stability of dried cultures have been improved by optimising process parameters and carrier combinations. **Carrier** is a substance which protects probiotic bacteria during processing. Also the tolerance of probiotic cells to unfavourable conditions has been improved by using stress treatments. The promising results obtained in the project will provide the industry a possibility to use alternative drying processes for probiotic culture production in future.

Use of probiotic and prebiotic combination (synbiotic) gives an added value to the product since prebiotics promote growth and well being of beneficial bacteria. The potential of different fibres and prebiotics as carriers for probiotics during drying process and in food matrices was evaluated. Different fibres and prebiotics showed large differences in their protective abilities. Fibres called polydextrose (PDX) and Nutriose FB were excellent carriers for probiotic *Lactobacillus rhamnosus* in dry products. These combinations show potential opportunities to further develop effective probiotic containing foods in new product categories. Consumers will have wider selection of probiotic foods with proven health effects.

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