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## OPTIMIZATION OF PROTECTIVE MEDIUM FOR SPRAY-DRYING OF *L. PLANTARUM*

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**S**pray-drying is one of the suitable methods for preservation of probiotic bacteria. However, this stabilization method reduces the viability of bacteria. In order to inhibit the harmful effect of spray-drying on cell viability, addition of protectants is advisable. In this work, the optimization of protective medium has been performed based on statistical experiment design. Several substances with known protective properties have been tested; trehalose, skimmed milk and monosodium glutamate.

The cell viability after the spray-drying ranged from 2.07 to 8.95%, depending on the protective medium used. The highest viability of *L. plantarum* directly after the drying process was observed when the protectants were 2.5% (w/w) trehalose and 2.5% (w/w) monosodium glutamate. It was also found that much more attention should be paid to the links between individual unit operations used in the production of probiotics, in particular, the culture and drying conditions.

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