

FERMENTATION OF EGG WHITE DRINK BY *BIFIDOBACTERIUM* WITH DIFFERENT CARBOHYDRATE SOURCES

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Egg white drink is a good alternative for consumers who suffer from lactose intolerance or have severe milk protein allergy. The aim of our research is to investigate the usability of egg white for fermentation by probiotic bifidobacteria.

The growth of *Bifidobacterium longum* Bb46 and *Bifidobacterium longum* DSM 16603 in enzyme-treated egg white drink was investigated. 3 different carbohydrate sources, monosaccharides (glucose and fructose) and disaccharides (saccharose) were added separately to egg white at a concentration of 2% and fermented samples without adding carbohydrates were served as a control. Afterward, the pH value, the cell count, as well as the cell yield was measured in the final products, additionally, the changes in protein profile were also evaluated by SDS gel electrophoresis.

After 24 hours of fermentation, a reduction in pH value was observed particularly when carbohydrate sources were added to egg white drink compared to control samples.

Generally, the total cell count was greater than $8.3 \log_{10}$ CFU/mL, and the cell count of *B. longum* DSM 16603 was considerably higher than *B. longum* Bb46 in egg with supplemented with glucose and saccharose.

Following SDS protein profile analysis of all studied samples, ovalbumin, ovoflavoprotein, and ovomucoid were detected in all studied samples, although their associated bands were fainter when carbohydrates were added but still visible in the gel. To sum up *B. longum* DSM 16603 can be applied for production of fermented probiotic egg white drink.