Lactose intolerant? Let’s employ bacteria!

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FERMENTATION

*Fermentation in food processing is the process of converting carbohydrates to alcohol or organic acids using microorganisms—yeasts or bacteria—under anaerobic conditions.

*Fermentation is a metabolic process that produces chemical changes in organic substrates through the action of enzymes.

FERMENTATION

Fermented tea
Yoghurt
Sauerkraut
Pickled cucumber
Kimchi
Wine
Bier
Bread
Dung
Microbiome

YOGURT

Yogurt is made from the fermentation of the lactose in milk by the rod-shaped bacteria Lactobacillus delbrueckii subsp. bulgaricus to produce lactic acid, which acts on milk protein to give yoghurt its texture and its characteristic acidic taste. Other bacteria found in yoghurt are Lactobacillus acidophilus or casei, Streptococcus salivarius subsp. thermophilus and Bifidobacterium bifidus.

JOURNEY

After ingestion, the bacteria run through the hostile environment of the gastro-intestinal system. The mouth is a dangerous place, as saliva contains enzymes with anti-microbial effects. The next hurdle is the acidic conditions of the stomach and its digestive enzymes. Then there are the bile salts in the small intestine. Yet despite all these hurdles, a good proportion of the yogurt bacteria do survive and make it to the colon where they interact with the resident bacteria.

ISOLATION

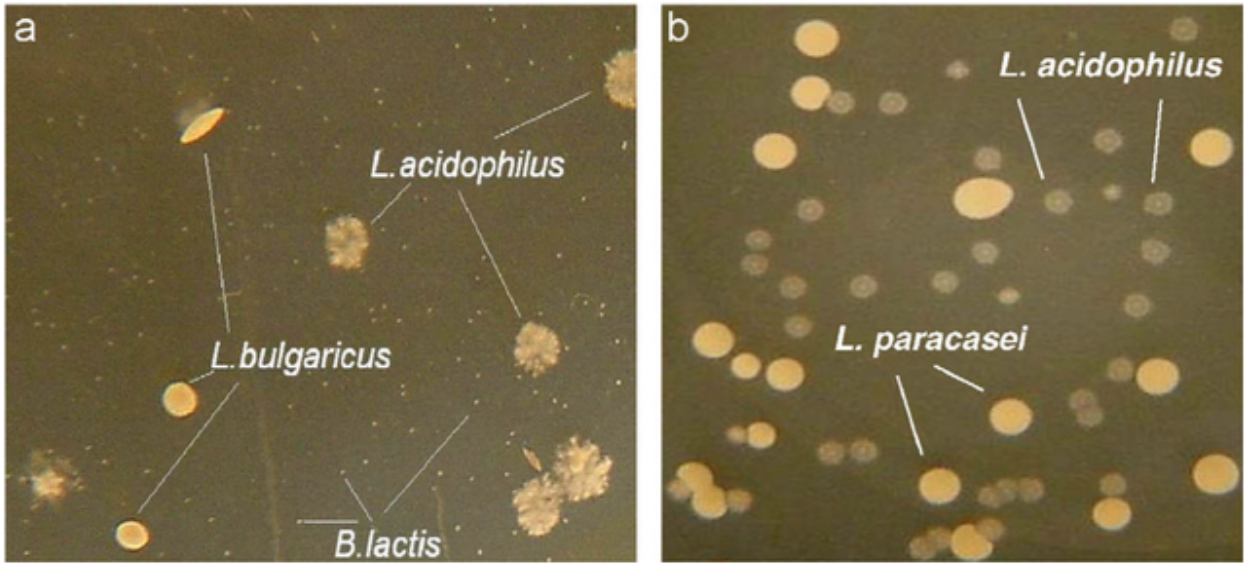

Fig. 1. Differentiation of *L. acidophilus* from *L. delbrueckii* subsp. *bulgaricus* and *B. lactis* on MRS-fructose agar (a) and from *L. paracasei* subps. *paracasei* on MRS-maltose agar (b).

ISOLATION

Streptococcus Thermophilus Isolation Agar (g/l; Final pH 6.8±0.2)

*Casein enzymic hydrolysate 10g
*Yeast extract 5g
*Sucrose 10g
*Dipotassium phosphate 2g
*Agar 15g

ISOLATION

Lactobacillus Isolation Agar

*MRS broth 52,2g
*Agar 20g