

## Prevention of spoilage bacteria and pathogens with SafePro® B-2

During storage of vacuum- and modified atmosphere packed (MAP) fresh and processed meat products an indigenous microbial flora of e.g. homo- and heterofermentative lactic acid bacteria, *Brochothrix*, and *Leuconostoc* may evolve. Additionally, pathogenic bacteria such as *Listeria monocytogenes*, *E. coli*, *Campylobacter* and *Yersinia* may proliferate. Apart from the potential safety hazard of pathogens the lactic acid bacteria might result in gassiness, off-color, and products with sour taste and off-flavor.

The growth of the natural spoilage flora is prevented in many commercial food products by a combination of different chemical additives. However, for numerous foods chemical additives are not desirable and bioprotective means are the alternative natural solutions. B-2 has been shown to inhibit a natural spoilage flora as well as inhibiting the pathogen *L. monocytogenes* in meat packed in modified atmosphere or vacuum. The effect is due to competitive exclusion and has been shown for numerous meat products both at Chr. Hansen in-house and in the meat industry.

Brochothrix CFU/g

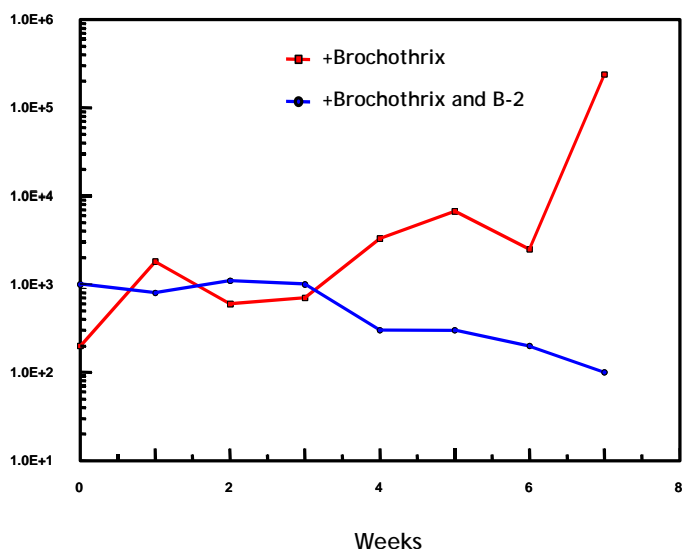


Figure 1. Development of *B. thermosphacta* in MAP-packed smoked filet applied with B-2 and stored at 7°C/39°F.

and the inhibitory effect possessed by the strain is due to competition since the ability to produce bacteriocins has not been detected. Additionally, *L. sakei* BJ-33 is a weak acidifier with only limited proteolytic and lipolytic activities and no production of hydrogen peroxide. These properties may partly explain the cultures' low impact on the sensory quality of a meat product (Jelle, 1987; Jelle, 1991; Andersen, 1997). Figure 1 shows how the application of B-2 significantly controlled the development of *B. thermosphacta* in smoked filet stored at 7°C/39°F.

### References:

- Andersen, L. 1997. Biopreservation with FloraCarn L-2. *Fleischwirtschaft* 75,(11),1327-1329.
- Jelle B. 1987. The preserving effect of lactobacilli on vacuum packed beef (in Danish). Master thesis, Department of Dairy and Food Science, Royal Danish Veterinary & Agricultural University, December 1987.
- Jelle B. 1991. Bioprotection of sliced meat products (in Danish). Report from the Board of Technology 1988-133/001-88.1269. Chr. Hansen A/S.