



# HIFOOD®

# HI-SHIELD P

A new generation of natural antibacterial agents and natural flavours (savory taste)

HI-SHIELD P is an innovative natural antibacterial and flavour enhancer designed for all bakery products, salad dressings which can be used more in general in the food industry, with mild taste and weak acid notes.

HI-SHIELD P can be effectively used as shelf-life extender, with its functionality based on the combination of two technologies: biotechnology (in particular fermentation) and ingredients manufacturing knowledge (in particular neutralization and spray drying).

We focused on the fermentation process of lactic acid bacteria, propionobacter and especially yeasts. With our knowledge on how to feed these micro-organisms and steer fermentation, we obtained a fast and efficient process to obtain a full range of immediately available organic acids, such as lactic propionic and acetic. The result is quite interesting and effective. Moreover, HI-SHIELD P is a concentrate, unlike most competing products in the market.



## PRODUCT PROPERTIES

- Natural: HI-SHIELD P is a natural shelf-life extender in powder form
- Concentrate: HI-SHIELD P is a concentrate, not blended with flours
- Gluten-free: HI-SHIELD P is not based on wheat flour, therefore it is suitable for gluten-free applications
- Based on corn derivatives (fermented corn starch)
- Allergen-Free
- Clean Label
- Salt reduction: as natural flavour enhancer, salt can be reduced in the recipe
- Can be combined with other antibacterial agents such as calcium propionate, vinegar, acetic acid, ...



## TYPICAL APPLICATIONS

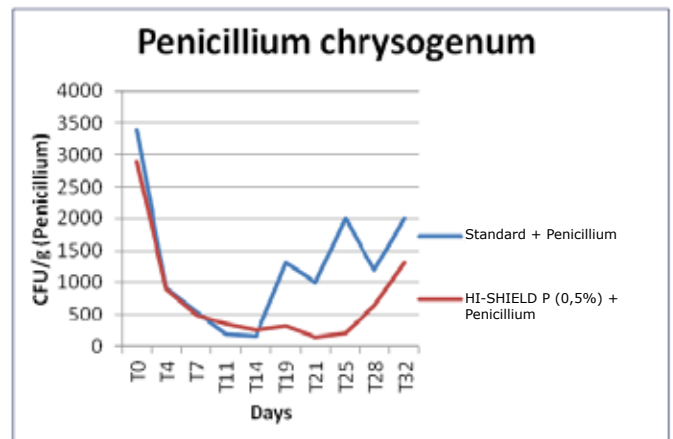
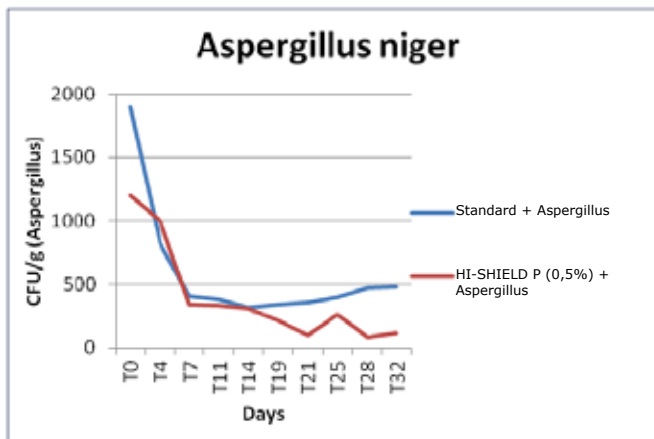
- As natural preservative for the bakery industry
- Shelf-life extender in fresh dumplings
- Salad shelf-life extender
- Shelf-life extender in bread loaves and rolls also in presence of sorbate or propionate
- Shelf-life extender and taste enhancer in cheese and products based on cheese

# WHEN TO USE HI-SHIELD P:

- To control the total plate count in your finished product
- To avoid mold growth
- To guarantee the shelf-life of the finished product in presence of border-line conditions (during hot season/ summer period, avoiding returns and non conformity)
- To extend shelf-life
- To replace chemical preservatives in recipes for clean label claims
- To increase sour taste
- To reduce salt content. HI-SHIELD P acts also as flavour improver and enhancer
- To fight against rope (bacillus subtilis) and pichia anomala (alt. yeast)



Various lab tests as well as various real-life tests demonstrated a clear anti-mold effect during shelf-life. For example, inoculating typical molds like *Aspergillus niger* or *Penicillium chrysogenum* in a “difficult” product from a mold standpoint like gnocchi (dumpling-like), the result indicated (see pictures) that molds development/ growth is kept down and controlled, despite the critical test conditions.



## Other Product Information

No GMO according to regulations CE 1829/2003, CE 1830/2003 and Directive CE 2001/1. No Allergens according to directive CE 89/2003, CE 26/2005, CE 142/2006 and CE 68/2007). Produced in a certified facility. HI-FOOD operates to ensure full batch traceability, an extensive Quality Control regime together with technical and application development support.

For more information about HI-FOOD ingredients and other customized applications, please contact:



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