

4Protection – the natural guard of the product identity

Sacco

No additives, no preservatives, 100% natural are the most prevalent trends that guide the choices of consumers; safety and durability an high quality standard level of foods are as important as ever.

4Protection Special cultures by Sacco help to enhance the quality and protect the brand image, allow the product to get to the end of shelf life ensuring a structural and sensorial stability, help to maintain freshness and not change the taste, aroma and texture...the ally for a much more genuine product till the consumer table.

According to the German Research Foundation (Vogel et al., 2011), protective cultures are active micro-organisms (concentrated individual or combined cultures) added to food in order to reduce the risk of pathogenic or toxigenic micro-organisms.

What is 4Protection Line

Since 1998 Sacco has been selecting protective cultures that inhibit undesired micro-organisms for use in different food products, especially for milk, cheese, meat and fish.

The cultures of 4Protection Line help to control and preserve the final product from alterations, fighting in a completely natural way any possible unwished bacteria and thereby maintaining a "clean label" product.

Many of the used strains were selected from probiotic microorganisms, which has been studied and shown to be effective through specific studies, microbiological tests and sensorial analysis of the products.



Sacco's new 4Protection culture concept is effective against yeasts and moulds, listeria, clostridia and other spoilage microorganisms (photo: Sacco)

How 4Protection line works

The selected 4Protection ferments do not acidify, nor alter the organoleptic characteristics of the product and are easily adapted even at refrigeration temperatures.

Today it is known that microorganisms produce a diverse range of microbial defence molecules including exotoxins, lytic agents, metabolic by-products and bacteriocins (from EFFCA position PFC-2016).

The process is based on a competitive effect for space against microorganisms in general, including pathogens, on the production of organic acids and peptides with specific mode-of-action.

Protective cultures have mainly a technological function in food manufacturing and help to improve food safety and hygiene; however they should not replace good manufacturing practices, appropri-

ate physical treatments, and cold chain maintenance, which ensure high food safety standards.

Thanks to 4Protection, food can reach the end of its shelf-life maintaining its structure and sensory properties, as well as its freshness, taste, flavour and texture.

The cultures, compatible and complementary to all Sacco ferments, can be used for direct inoculation or surface treatment.

The lines devoted to the protection of milk and dairy products are:

- Anti Yeast and Mould AYM: allows products to reach the end of their shelf life ensuring structural and sensorial stability and helps to maintain their freshness.
- Anti Listeria monocytogenes AL: reduces the growth of Listeria monocytogenes increasing the safety of the product throughout its shelf life.
- Anti Clostridia AC: acts on Clostridia avoiding the altered aroma unpleasant smell and ensuring a more consistent and elastic texture and a finished product without defects.
- Anti Other Spoilage Microorganisms AOSM: reduces the growth of unwanted indigenous present in milk or coming from the environment, thus improving the milk storage stability and quality, allowing for a standardization of the protection process, in terms of acidification yield and overall sensory.

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