

Provian® D

A highly effective safeguard for meat products with no effect on taste

Niacet

Provian D is a new development in the Provian product line of highly effective products aimed at enhancing food safety and shelf life extension. It is a functional product that combines the antimicrobial properties of sodium acetate, sodium lactate and sodium diacetate, specifically developed for protection against pathogenic bacteria like Listeria. Provian D increases the safety and maintains the quality of meat products.



Powder form offers significant advantages

As a free flowing powder, Provian D can be applied either as powder (e.g. in meat mass or spice blends) or as aqueous solution at appropriate concentrations, in different meat processing steps. Being a dry product makes Provian D easy to handle, convenient to store and more cost effective than liquid alternatives.

Dosages

The dosage level of Provian D depends on local legislation, meat type and shelf life requirements. In the United States, legislation allows 0.65% of Provian D based on the maximum levels permitted by the USDA's Food Safety and Inspection Service. In Europe, its usage should be in line with the *quantum satis* principle, meaning at levels not higher than necessary to achieve the intended purpose. For optimal effects, we recommend a dosage level of 0.65% of Provian D based on the weight of the total meat formulation.

Antimicrobial efficacy

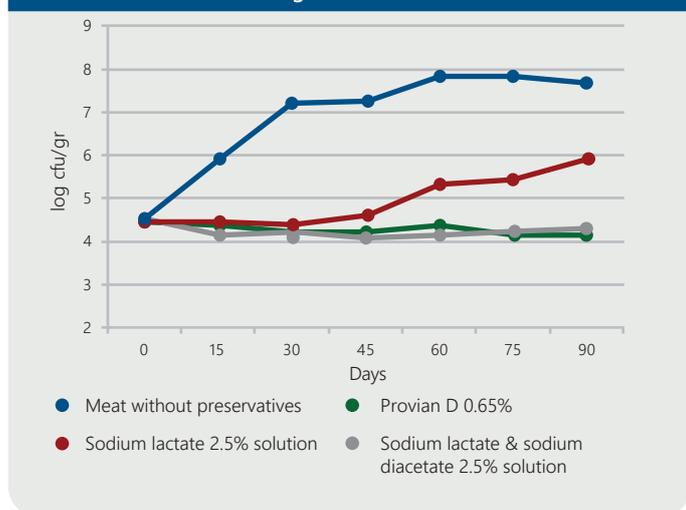
Provia D has excellent antimicrobial properties ensuring the safety of meat products.

The bacteriostatic effect of Provia D has been studied by several independent research institutes. Below, a recent study is presented demonstrating the microbiological growth inhibition effect of Provia D in vacuum packed cooked frankfurters, stored at approximately 4°C for a period of 90 days.

Excellent Listeria Inhibition

Provia D inhibits the growth of *Listeria monocytogenes* in cooked frankfurter sausages. Whilst *Listeria*'s growth was more than 3 logs in the control samples, the frankfurters containing only 0.65% Provia D showed no growth of *Listeria* for the whole 90 day test period.

Fig 1: *Listeria monocytogenes* growth inhibition at +4°C / 39°F storage



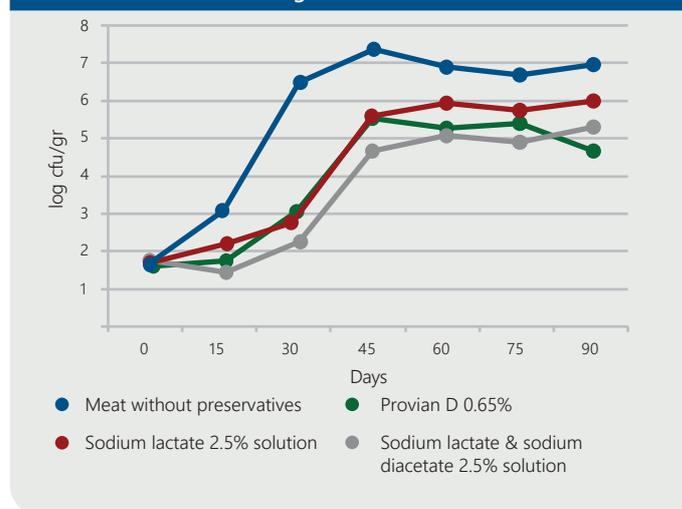
No compromise on taste

Based on sensory analyses carried out by consumer panels, Provia D has no adverse effects on sensory parameters such as flavor, texture, appearance and overall acceptability. In addition, due to its buffering capacity, Provia D does not change the pH of cooked meat products keeping the cooking yield at high levels.

Shelf life extension

Provia D, due to the synergistic effects of its ingredients, effectively extends shelf life of frankfurters by 60% on average by extending the lag phase of total aerobic bacteria.

Fig 2: Total aerobic bacteria growth inhibition at +4°C / 39°F storage



Provia® D is your key ingredient when preserving Ready-To-Eat (RTE) meat products

- Excellent antimicrobial growth inhibition against *Listeria*
- Extends shelf life
- Sodium reduction
- Powder form is logistically economical and easy to handle
- No adverse effect on organoleptic characteristics
- Cost effective due to low dosages in comparison to liquid lactate based alternatives

Niacet

World-Class Quality, World-Class Reputation

Niacet is a leading producer of organic salts, including propionates and acetates, serving the Food and Pharmaceutical industries. With two longstanding and fully automated manufacturing sites, located in Niagara Falls, NY USA, and Tiel, The Netherlands, Niacet offers world-class quality products to a global market.

Niacet b.v.
P.O. Box 60
4000 AB Tiel
The Netherlands

Tel: +31 344 615 224
Fax: +31 344 611 475
Email: tiel@niacet.nl
www.niacet.com

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