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 (ISO 9001 : 2015 & AEO T1 Certified Co.)
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APPLICATIONS OF NISIN

NISIN , as an effective **Natural Food Preservative**, can be used in a number of Foods under the permission by local legislation.

Some of the applications of NISIN are listed as follows:

- 1) Dairy Products
- 2) Meat Products and Marine Products
- 3) Plant Protein Foods
- 4) Canned Food
- 5) Fruit Juice Drinks
- 6) Liquid Egg and Egg-Contained Products
- 7) Alcoholic Beverage
- 8) Salad Sauce And Dressings
- 9) Sealed Foods With Heat Process

1) DAIRY PRODUCTS :

- a) Addition of 0.05 gm /kg. NISIN to pasteurized milk, the storage period can be **expanded over 2 times**.



Dairy Products

- b) Adding 0.08 gm. / kg. to 0.1gm. /kg. NISIN to second Disinfected Milk and sterilizing at 115°C for 15 minutes can make the products to reach the commercially **"No bacteria standard"**.
- c) Usage of 0.05 gm. / kg. NISIN in sour milk and fruit milk (about pH = 4) and sterilizing at 90 °C for 20 minutes can **prolong** the Shelf Life from **6 days up to over 1 month** at ambient Temperature.

- d) Usage of 0.05 gm / kg. NISIN at UHT in Bacteria-Free packing milk, can reduce the rate of putrefaction from 0.04% to 0%.
- e) Addition of 0.08 gm. / kg. to 0.1 gm. / kg. NISIN to No-sugar canned condensed milk, can inhibit the out-growth of Heat-Resistant spores and **decrease 10 minutes in heat process time.**
- f) Addition of 0.08 gm. / kg. NISIN and treatment at 121 °C for 3 minutes (i.e. FO=3) can maintain the Shelf life of low or Non-Fat Milk, No - salt Cream, and Flavor Milk to 6 weeks at 40 °C .
- g) Addition of 0.05 gm. /kg. to 0.1gm. / kg. NISIN to processing **Cheese** can **solve the putrefaction** caused by Gram-positive bacteria (such as Clostridium botulinum and other Anaerobic Clostridium, Lactobacillus bulgaricus etc.).

2) MEAT PRODUCTS AND MARINE PRODUCTS :

a. Meat Foods

Addition of 0.05 gm. / kg. to 0.15 gm. / kg. NISIN combined with a few of other food preservatives to the low temperature Meat products can expand the **storage period to more than 3 months** at Ambient Temperature.

b. Marine products

Addition of 0.1gm. / kg. to 0.15 gm. / kg. NISIN to Fish or Mollusks or other marine products can effectively inhibit the spoilage Gram-positive bacteria, and prolong the Shelf life **over 5 times.**



Meat Products And Marine Products

3) PLANT PROTEIN FOODS :

Plant Protein Foods



- a) Addition of 0.1gm. / kg. to 0.15 gm. / kg. NISIN to Soya-bean Milk can prolong the Shelf life **over 3 times**.
- b) Addition of 0.1gm. / kg. NISIN to Lactones bean Curd can expand the Shelf life **over 5 times**.
- c) Addition of 0.1gm. / kg. NISIN combined with a few of other food preservatives to Bean Cheese and sterilization appropriately can prolong the Shelf life to **6 months**.
- d) Addition of 0.1gm. / kg. NISIN to Peanut milk (the microbial colonies is less than 40 cfu / ml after pre-treatment) can increase the Shelf life to more than **one month**.

4) CANNED FOOD :

Canned Foods



Canned foods are often contaminated by some extremely heat- resistant bacteria spores.

These spores will grow to cause food decay in appropriate condition.

Addition of 0.1gm. /kg NISIN to Canned Food can **Prolong the food storage to 2 years at blazing Temperature**.

Moreover, its use in canned foods can also decrease the heat- treatment degree by 50%, which not only **saves the energy**, but also **improves the Nutritional Value**, Appearance and Quality of foods.

5) FRUIT JUICE DRINKS :

The putrefaction of fruit juice is caused mainly by Alicyclo Bacillus spp., which is an Acidic and heat resistant spore – forming bacteria and suitable to grow & reproduce at temp. of 25°C – 60 ° C and at pH 2.5 - 6.0.



Fruit Juice Drinks

Alcalophilus spp. can contaminate the product in the process of drinking, production or water using.

The addition of 0.05 gm. / kg. to 0.1gm. / kg. NISIN can prevent the growth and reproduction of the survival Alicyclobacillus spores and guarantee the quality of products.

6) LIQUID EGG AND EGG-CONTAINED PRODUCTS :

Addition of 0.05 gm. / kg. to 0.1gm. / kg. NISIN to liquid egg or egg-contained products can effectively inhibit heat-resistant spores and prolong the Shelf life from **7 days to over one month.**



Liquid Egg

7) ALCOHOLIC BEVERAGE :

NISIN can not inhibit Yeast and therefore, is allowed to be used in the Fermentation of Alcoholic Beverage, such as Beer, Fruit wine and other wine products.



Alcoholic Beverage

- a) **Yeast pre-treatment:** NISIN can **replace** the **traditional method** of acidic rinse to eliminate the contamination of *Lactolactis* in yeast, which **will increase** the Living Activity, Fermentation and Aggregation of Yeast.

1.0 gm./ kg. to 1.5 gm. /kg. NISIN is added to *yeast syrup* and stir well, then keep it for 4-6 hours.

- b) **Decrease pasteurized time:** Add 0.01gm / kg. to 0.05 gm. / kg. NISIN to the products at the end of pasteurization.
- c) **Inhibit bacteria:** Addition of 0.025 gm. / kg. to 0.1gm. / kg. NISIN before Fermentation, the residual amount of NISIN in the finished wine can reach 0.01gm. / kg. to 0.05 gm. / kg.

Addition of 0.1gm. / kg. NISIN during the process of Fermentation of the Grape wine can prevent the pollution caused by *Lactobacillus brevis*, *L. casei* and *Leuconostoc* spp. et al.

8) SALAD SAUCE AND DRESSINGS :

Addition of 0.05 gm. / kg. to 0.2 gm. /kg. NISIN to these types of products can inhibit Lactic-acid bacteria and spores, Reduce the putrefaction of Low - Fat and Low - Salt products, and prolong the Shelf life by **over 3 times**.



9) SEALED FOODS WITH HEAT PROCESS :

High heat process will affect the quality of sealed foods, and low heat process will not kill the heat-resistant spores.

The addition of 0.05 gm. / kg. to 0.2 gm. / kg. NISIN to these types of foods can solve above mentioned problems effectively.

