عنوان مقاله:
Inactivation of Penicillin G in Milk Using Hydrogen Peroxide

محل انتشار:
هفتمین همایش مراکز تحقیق و توسعه صنایع و معادن (سال:1387)

نویسندهان:
Ehsan Sadeghi - Faculty of Kermanshah medical science University and the manager of Manizan dairy company R&D
somayeh Bohlouli - DVM
Salman Nazari - Member of manizan dairy company R&D

خلاصه مقاله:
Milk antibiotic residues have been a public concern in recent years. The Grade A Pasteurized Milk Ordinance mandates that raw Grade A milk will test negative for lactam antibiotic residues before processing. The purpose of this research was to investigate the ability of various levels of peroxide and heat to inactivate penicillin G in raw milk. Whole milk spiked to a mean of 634 ± 10.1 ppb of potassium penicillin G was treated with hydrogen peroxide at levels of 0.0, 71.0, 90.0, and 43.0%. Samples at each peroxide level (n = 6 per treatment) were treated as follows: 1) incubated at 34.4°C for 3 h, 2) pasteurized at 82.8°C for 3 min, 3) incubated and pasteurized as in treatments 1 and 2, or 4) received no further treatment. A lactam competitive microbial receptor assay was used for quantification of penicillin G. Concentrations of penicillin in selected samples were determined by HPLC and -star kit for a comparison of test methods. Treatments were evaluated relative to their ability to reduce milk penicillin G levels to below the safe level of 5 ppb. The 9% hydrogen peroxide level was ineffective for all treatments. Hydrogen peroxide at 11% lowered the mean penicillin G (±SEM) from 434 ± 10.1 to 5 ± 1.49 ppb using the incubated and pasteurized heat treatment. The 43% concentration of hydrogen peroxide was the most effective, inactivating penicillin G to a level well below the safe level of 5 ppb with the pasteurized heat treatment, with or without incubation.

کلمات کلیدی:
milk, antibiotic, penicillin, hydrogen peroxide

لینک نتیجه نگاری در سویلیکا:
https://www.civilica.com/Paper-CIMRDC07-CIMRDC07_033.html

این صفحه به متن تاییدیه نمایه سازی مقاله در سویلیکا استنادی سویلیکا می‌باشد. در هر لحظه به منظور تایید اصلاح این گواهی می‌توانید وضعیت نتیجه نگاری را از طریق لینک فوق بیشتر بدانید.