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METHOD OF CLEANING

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4 Claims. (Cl. 87-5)

This invention relates to an improved method of cleaning and disinfecting milk containers and the like.

Under present dairy practice the milk containers, which are generally glass-lined, are cleansed and disinfected in two separate and distinct operations. The containers are first washed with a solution of a detergent material and are then disinfected by the application of steam, hot water, or chemicals.

By means of the present invention, the operation is carried out in a single step, and at the same time more complete and permanent disinfection is obtained than with the former method. At the same time an appreciable saving of material is accomplished. Moreover, in the prior processes it was impracticable to use an abrasive material inasmuch as it was practically impossible to remove such abrasive material from the container. In the present process a soluble abrasive detergent is used which later may be dissolved in water and thereby readily removed.

In accordance with the present invention the gross portions of the milk or other impurities are first rinsed from the surface of the container with a stream of water from a hose. The water is allowed to run off so that except for what remains upon the walls of the container there is substantially no water present.

A solid crystalline detergent of germicidal composition, preferably one containing available chlorine, and in powdered or crystalline form, is sprinkled or brushed over the wet surface of the container. The amount of the detergent material is such as to saturate the water present, and to provide a sufficient excess to form an adherent paste. The entire surface of the container is then scrubbed, generally with a brush, the saturated solution acting as a detergent and a disinfecting agent, and the undissolved material acting as an abrasive. Following the desired amount of scrubbing, the detergent paste is left upon the surface of the container, preferably until such time as the container is needed for use again. The composition may then be flushed from the surface with a stream of clean cold water.

It has been discovered that bacteria still exist in quantities after the paste has remained upon the walls for a period of one-half hour, but after one hour most of the bacteria have been killed and satisfactory disinfection is accomplished. For ordinary purposes, the paste may be left in contact with the container for 1-12 hours, but longer periods may be used where desired, par-

ticularly where it is not convenient to refill the container sooner. The presence of the paste upon the walls of the container serves to prevent recontamination of the walls. It is believed that the length of time required to obtain maximum germicidal action is due to the fact that the milk forms a protective coating for the bacteria and that as time passes, the protective layer is either penetrated or dissolved, permitting the chlorine to kill the bacteria.

A preferred chlorine-supplying detergent is described in U. S. patent, No. 1,555,474. This comprises a tri-sodium phosphate-sodium hypochlorite composition, and a saturated solution of this product is not only an efficient detergent, but is a very effective disinfectant, containing available chlorine to the extent of 5,000 to 10,000 parts per million. Other detergent materials, either combined or mixed with organic or inorganic materials containing available chlorine in sufficient amount to act as an efficient disinfectant, may be used.

For example, tri-sodium phosphate may be used with sodium hypochlorite, calcium hypochlorite, sodium-para-toluene-sulfo-chloramide, or the like. Instead of tri-sodium phosphate other detergent compositions such as sodium carbonate, sodium silicate, sodium meta-silicate, borax, sodium meta-phosphate, sodium pyrophosphate or the like may be used in combination with chlorine-supplying materials.

Instead of adding the detergent in solid form to a wet container, the detergent germicidal composition may be prepared as an aqueous paste and added in this form.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I claim as new and desire to secure by Letters Patent is:

1. The method of cleansing milk containers and the like which comprises rinsing gross impurities therefrom with water, removing substantially all of the water, dusting the interior of said container with a water soluble abrasive detergent material having germicidal properties in an amount sufficient to saturate the water remaining therein, and to form an adherent paste therewith, scrubbing said container with said paste, whereby said undissolved particles act as abrasive material and said saturated solution acts as a detergent, maintaining said paste

in contact with said container for a period of at least one hour, and removing the detergent by dissolving it in water.

2. The method as set forth in claim 1 in which the detergent is a chlorine supplying detergent.
3. The method as set forth in claim 1 in which

said detergent material comprises tri sodium phosphate and sodium hypochlorite.

4. The method as set forth in claim 1 in which the detergent comprises an alkali metal detergent and a chlorine supplying compound.

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