METHODS OF ANALYSES

for

TOMATO PRODUCTS

Sand and Inorganic Residue

FOR USE OF USDA PROCESSED FOODS INSPECTORS

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

P R E F A C E

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SAND AND INORGANIC RESIDUE

INTRODUCTION AND BACKGROUND

Tomatoes, properly sorted, washed, prepared and processed, should be free of sand or similar gritty material, small pebbles or mud balls. However, any breakdowns of efficiency in any of these operations can cause the presence of such material in peeled tomatoes as well as other tomato products, principally tomato juice.

In-Plant inspectors should be alert to such conditions. Prime examples of some of the possible breakdowns or failures would be:

1) Use of tomatoes heavily smeared with mud or tomatoes which are cracked and embedded with dirt. (Particular attention should be given to mechanically harvested tomatoes).

2) Inadequate washing facilities, including insufficient replenishing of re-circulated water and insufficient numbers of final spray rinsings.

3) Inadequate draining of the tomatoes after washing.

4) Poor sorting.

When such conditions are noted in plants, inspectors should be watchful for sand (and other contamination) in the finished items.

Heavy filth, sand and similar material may be most easily detected in the bottom of tomato juice containers which have been emptied of their contents prior to any agitating or mixing. Another suitable means is by careful examination of the grading tray after allowing a few minutes for the product to settle and gently pouring off the juice. Verification of suspected sand is often possible by rubbing the surface of the grading tray with a spoon. The presence of sand is evidenced by a "grating" feel or sensation.

The field method for estimating sand (or grit) specified herein is used primarily for tomato juice, although it may be adapted for other tomato products where such test is indicated.

PROCEDURE

Tomato Juice - use without diluting.

Tomatoes - pour contents of the container over a screen and wash with a fine spray - turning the material over while spraying. Catch washings in a suitable container.

Tomato Products - (Incoming Concentrated Tomato Juice) - dilute contents of the container with water to 6% total solids.
(See Inspection Aid No. 77)

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1) Pour 600 ml. sample into a 1 liter beaker.

2) Fill beaker with water, stir well, remove spoon and agitate with a rotary motion.

3) Allow to settle for two minutes or longer, if necessary, and decant three-fourths of the liquid.

4) Add at least 500 ml. of water and repeat process (2 and 3 above) until liquid is fairly clear.

5) Continue adding the juice or tomato product in such portions and repeating the process until entire contents of the container are used.

   Thoroughly rinse the container and add the rinse water to the beaker.

6) Agitate, allow to settle, and decant all but about 150 ml. of the liquid.

7) Swirl the remainder, causing the sand or grit to collect in a circle in the center of the bottom of the beaker.

8) Examine aliquot for presence of sand or grit.

The United States Standards for Canned Tomatoes and Tomato Products do not specifically mention sand (or grit) under the factor of Absence of Defects.

If the amount of sand recovered is noticeably coarse or of such quantity that the appearance or edibility of the product is adversely affected to a serious degree, the product is designated:

"GRADE NOT CERTIFIED - - Foreign Material -- Sand."