

Chocolate Studied

Chocolate aroma involves more than 300 chemical compounds, says Dr. Philip G. Keeney, professor of food science at The Pennsylvania State University. Dr. Keeney and associates are experimenting with certain of these compounds involved in processes converting raw cocoa beans into a finished product. The studies are concentrated on the aroma and taste components of chocolate flavor. When shipped into this

country, cocoa beans do not have the typical flavor of chocolate, he said recently in "Science in Agriculture," the quarterly magazine of the Agricultural Experiment Station at Penn State. Flavor is developed in the chocolate factory, primarily by roasting. By blending different types of beans, and by manipulating manufacturing processes, desired and sometimes unique flavor properties are developed.

Chemical substances are altered in roasting the beans. A complicated series of reactions follow, yielding the aroma and taste of chocolate. Chemical compounds involved in these transformations are called "flavor precursors." Precursor formation depends very much upon processes used in the tropics where the cocoa beans are grown to prepare the beans for market.

Fermentation is the most important process given the beans in the tropics, Dr. Keeney stated. Basically, the beans are taken from the pods and are allowed to ferment 3 to 7 days in piles on the ground, in bins, sweat boxes, or trays. Mucilaginous pulp alcohol, which is oxidized to acid by bacteria.

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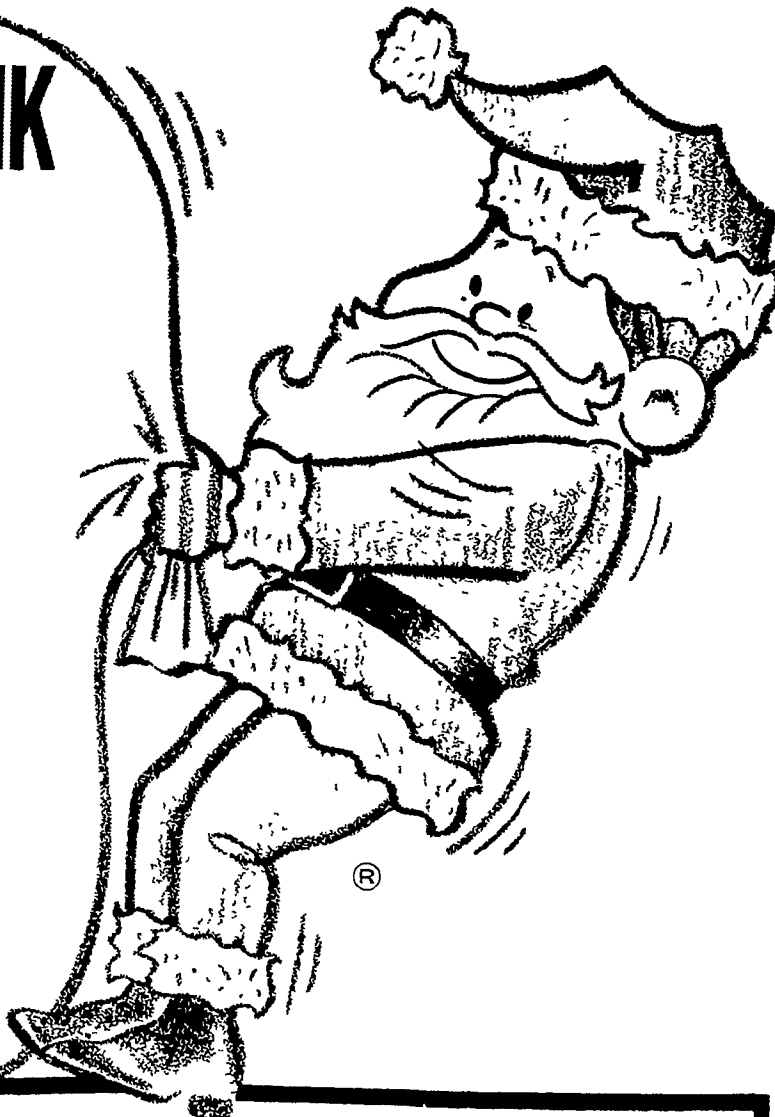
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