

Canning article called needless scare

A sensational article in the May issue of Good Housekeeping magazine has fallen like a bomb on the canning community. The article, which unfolds a horror story of botulism poisoning caused by home-canned tomato juice, blames certain strains of tomatoes for the 1974 incident and urges homesteaders to avoid new yellow, orange or miniature tomatoes and to pressure-can all tomato products.

According to USDA recommendations, tomatoes and other acid foods—including other fruits and pickles—can be canned by the boiling water bath method because *Clostridium botulinum*, the organism that causes botulism poisoning, cannot grow in an acid environment.

(Low-acid foods—including all vegetables and meats—must be canned under pressure so the food gets hot enough—240 degrees F—to destroy the spores of the organism that may be present. If they are not destroyed, these spores may germinate and grow inside the food, producing a deadly poison.)

TELEPHONES at county Cooperative Extension Service offices around the state have been ringing as concerned homesteaders try to verify the facts and check the recommendations in the magazine article. Food scientists at Michigan State University have stated the article is full of misconceptions and outright errors in fact.

First, the scientists said, there is no good evidence that low-acid tomatoes are to blame for this poisoning incident or any of the other rare cases of botulism poisoning from home-canned tomato products. Even if low-acid tomatoes are eventually to be a risk factor, the idea that yellow, orange and miniature tomatoes are particularly low in acid is false.

Tests of pH (acidity) in tomato varieties have shown that some varieties do regularly test out as more or less acid than others. But the average pH of the tomato varieties is no different from that of the standard red varieties.

Varieties described in seed catalogs as "low-acid" cannot be relied on to test low in acid. Variations in sugars and other components can mask acidic flavor. This can mislead those who try to judge acidity by taste rather than laboratory measurement.

ACIDITY IS NOT determined exclusively by variety, the scientists reported.

Growing conditions—including temperature, number of sunny days, water and use of fertilizer—influence acidity so that the same variety often varies in acidity from one growing season to the next.

How ripe the tomato is when it is picked and processed is another important factor completely overlooked in the magazine article. As tomatoes get overly ripe, they tend to become significantly less acid.

The MSU scientists therefore urged home canners to use only mature ripe—or even slightly overripe—tomatoes for canning. They pointed out that overripe or rotting fruit is not only less acid but also more likely to be contaminated with bacteria, molds or yeasts that can cause spoilage.

"Though there is no conclusive evidence to suggest adding acid to tomato products is necessary for safety, it can do no harm," said Dr. Theodore Wainwright, Extension food specialist at MSU.

"Addition of acid provides homesteaders with extra insurance against the very slight chance that normal variations in tomato acidity will sometimes result in acid levels low enough for growth of the botulism organism. Research now in progress is expected to more fully define the possible risk involved. Until this research is completed, homesteaders may choose to add acid to provide an extra margin of safety."

THE MSU EXPERTS suggested 1½ teaspoons of lemon juice or ½ teaspoon of citric acid per pint (twice as much per quart)—should be sufficient to eliminate any low acid condition in home-canned tomatoes, especially if the homesteader avoids using overripe or rotten fruit.

The magazine article, on the other hand, advises pressure-canning tomatoes if there is any doubt about the product's acidity. It does not give any recommendations on times, temperatures or other details of processing, however.

"If pressure canning were the only way to produce safe, home-canned tomato products, we would certainly recommend it," Dr. Wainwright said. "This is not the case, however. Hot packing tomatoes that are not overripe and processing properly in a boiling water bath is still our recommendation."

Following sanitary preparation procedures and recommended processing times and temperatures is essential, he added, to eliminate spoilage organisms. Re-

search has shown that improper processing of tomato products may permit the growth of molds and other spoilage agents. In some cases, the activities of these organisms may lower the acidity in the food to a level at which the botulism organism

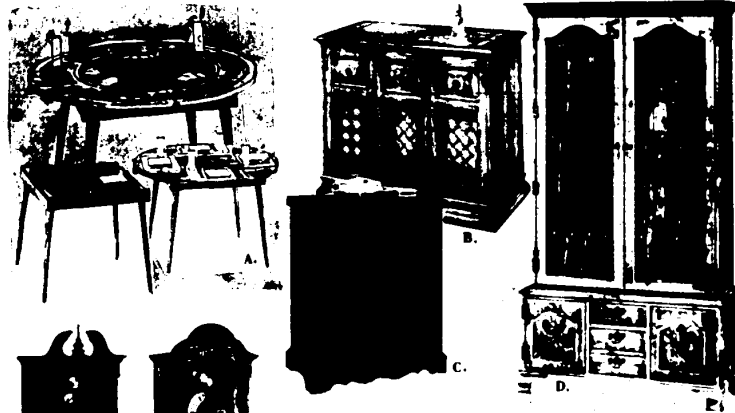
can grow and produce its deadly toxin. IN THE INCIDENT related in the magazine article, improper processing or contamination of the tomato juice was probably the basic problem, Dr. Wainwright says.

"Contrary to what the article says, the botulism organism will not proliferate in the human body," he added. "Poisoning occurs when a person ingests preformed toxin in food. The botulism organism itself does no harm if it is ingested."

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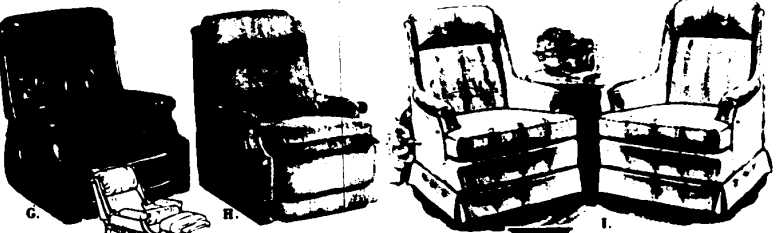
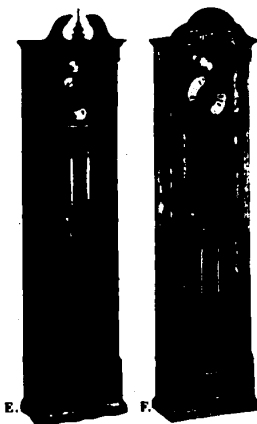
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