Benzene concentrations in beverages

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A new study reveals that cancer-causing benzene is still elevated in certain drinks. Credit: Courtesy of the American Chemical Society

Only nine percent of 199 beverage samples had benzene levels above the U. S. Environmental Protection Agency (EPA) limit of 5 parts per billion (ppb) for benzene in drinking water, according to a study by EPA and U. S. Food and Drug Administration (FDA) scientists. It is scheduled for the current issue of ACS' *Journal of Agricultural and Food Chemistry*.

Products containing benzene above the EPA level were reformulated by

the manufacturers to minimize or eliminate benzene and one product was discontinued, researchers said. Benzene levels in the reformulated products were 1.1 ppb or less.

About 71 percent of beverage samples in the study contained less than 1 ppb. Based on results from the survey and actions taken by the beverage industry, FDA concluded that the levels of benzene found did not pose a safety concern for consumers.

In the study, FDA's Patricia Nyman and colleagues point out that benzene can form at ppb levels in some beverages that contain a food preservative, benzoate salt, and ascorbic acid (vitamin C). In the early 1990s, the U.S. beverage industry discovered benzene in some beverages and reformulated those products. In 2005, the substance again was found in some beverages, likely because new manufacturers were unaware of the problem, the study says. Some manufacturers also have added vitamin C to drinks in response to consumers' desire for healthier products.

The study found that product formulation, shelf-life, and storage conditions were important factors affecting benzene formation. The report also describes the in-house validation of FDA's analytical method for determining benzene in beverages.

Source: ACS