



Apple Juice and Arsenic Backgrounder April 2018

What is arsenic?

Arsenic is an element that can be found in water, air and soil. According to the Food and Drug Administration (FDA), arsenic occurs in the environment from erosion of arsenic-containing rocks, volcanic eruptions and contamination from various industrial sources. In the early to mid-1900s, arsenical insecticides were used in agriculture. Insecticides containing arsenic were largely banned for agricultural use in the mid-1950s. From the environment, arsenic can make its way into food products following absorption through soil and water.

There are two general types of arsenic: organic and inorganic. The inorganic forms of arsenic can be harmful, while the organic forms of arsenic are considered harmless. Because both forms of arsenic have been found in soil, small amounts may be found in certain food and beverage products, including apple juice and apple juice concentrates.

Arsenic and apple juice

For decades, FDA has tested for arsenic in apple juice and other fruit juices using the most sophisticated methods of analysis and risk assessment, which takes into account the amounts of apple juice typically consumed by children and adults. Continually, there is no arsenic detected in the vast majority of apple juice tested by the FDA. The agency's most recent data shows that of 32 samples tested, 28 (or 88 percent) were "No Detects." The mean level of arsenic in the 12 percent (4 samples of the total of 32) where it was detected was 2.2 ppb – far below the 10 ppb "action level," (see below) resulting in the agency maintaining confidence in the safety of apple juice consumed in the U.S.

What is the standard for arsenic in apple juice?

Currently, there is no federal standard for arsenic in apple juice. The FDA has proposed an "action level" of 10 parts per billion (ppb) for inorganic arsenic in apple juice. This "action level" provides guidance-only to the industry.

USApple has voiced its concerns to FDA regarding the 10ppb action level, noting the lack of scientific data to justify the amount. Further, 10ppb is the same level set by the Environmental Protection Agency (EPA) for arsenic in drinking water. USApple maintains that the limits for arsenic in drinking water should not be applied to apple juice. EPA has set lower limits for arsenic in drinking water because the risk assessment assumes that the public would be consuming two liters of water with those levels every day for their entire lifetime. The same cannot be said for apple juice.

Does organic apple juice have less arsenic than conventional apple juice?

There is no data to support that organic juice tends to have less arsenic than conventional apple juice. In fact, according to FDA, there is no known data to support any difference in the amount of arsenic found in organic juice vs. conventional juice. Even organic apples come from trees that grow in soil that may contain arsenic.

Talking Points

- There is no known occurrence of apple juice in the U.S. causing illness due to arsenic contamination.



- FDA routinely tests apple juice for arsenic. The agency maintains confidence in the safety of apple juice consumed in the U.S.
- Apple juice processors follow regulations from FDA that require high standards in the handling, processing and packaging of apple juice products.
- All juice companies are required by law to implement a food safety program to address hazards that may occur in food processing. Juice processing companies are mandated by the FDA to evaluate processing systems for microbiological, chemical and physical hazards and to implement measures to control these hazards.
- Processors typically send their own quality assurance experts to visit their suppliers to qualify them as high-quality producers. They inspect their facilities and production practices and make sure they are producing high quality ingredients.
- Processors then inspect the ingredients they receive from their suppliers, often using third party laboratories that run sophisticated analysis to check for potential problems to make sure the ingredients meet their standards for high quality.
- Use of pesticides with lead arsenate is not permitted on fruit and vegetable crops in the U.S. All manufacturers have requirements that products imported into the United States have to be in compliance with U.S. regulations.
- FDA monitors food ingredient imports and tests them to make sure the standards are being met. Apple juice concentrate comes from many countries around the world based on availability and quality. By law, 100 percent apple juice manufactured in the U.S. with imported concentrate must declare the country of origin on the juice package.

