

From the Food Safety Committee

Food Fraud

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What Is Food Fraud?

Food fraud is an ever-present issue in the food supply chain, including the beer supply chain. This *Food Safety Bite* will provide you with a brief overview of food fraud, including examples from the beer, wine, and spirits industries and examples from some common beer ingredients.

Food fraud is the intentional adulteration of food products where the motivation is economic gain. When one thinks of food fraud the first examples that come to mind are usually those where a higher value product is adulterated with a similar, lower value product to increase the volume and profit margin of the higher value commodity—for example, olive oil adulterated with hazelnut oil to lower the cost of production and increase the volume of finished product that is sold as 100% olive oil. However, food fraud also includes cases where unauthorized additives are added to a product to make it appear fresher or where a product is intentionally labeled as something it isn't (e.g., a nonorganic product labeled as organic, or a counterfeit beer fraudulently labeled as a different producer's beer brand). Furthermore, adulteration may occur in order to meet food specifications like protein content and bitterness.

While the primary motivation of an act of food fraud is economic gain, these acts can also lead to consumer harm. Take the example of olive oil again: olive oil is commonly adulterated by hazelnut oil, which has the potential to cause life-threatening allergic reactions in sensitive consumers (1).

What Can You Do?

Assessing your supply chain for food fraud vulnerabilities is similar to assessing your production process for food safety hazards using HACCP. However, food fraud assessments are a *vulnerability* analysis instead of a *hazard* analysis. In part, this analysis includes, but is not limited to, researching your ingredients for historical and contemporary evidence of food fraud and putting measures in place to ensure you're receiving only authentic ingredients and materials. These measures come in many forms, but they often include supplier agreements, supplier risk assessments, and authenticity testing on ingredients. As with HACCP, the measures you put in place will be based on the risk level you assign to each identified vulnerability. Also, like HACCP, you can take training courses on VACCP (vulnerability assessment and critical control points) and food fraud to learn more about the steps to take and available tools and resources.

Examples of Food Fraud in the Alcohol Industry and Common Beer Ingredients

- Beer, liquor, and wine:
 - In the 1800s, some beers were reported to have achieved their target bitterness by being adulterated with strychnine (2).
 - Nearly 15 million liters of adulterated alcoholic beverages were seized across Europe between December 2021 and May 2022. This included fake vodka with methyl alcohol added and wine with additives not corresponding to the quality of the wine declared on the label (3).
 - In 2014, the first case of wine fraud was successfully prosecuted in the United States (4).
 - Counterfeit champagne was discovered in Italy in 2015 (5).
 - Methanol-tainted alcohol: In Iran, tainted alcohol led to over 2,000 poisonings in 2020 (6); in India, 22 deaths from methanol poisoning occurred in May 2023 (7,8); and tainted wine in Italy led to 90 hospitalizations and 23 deaths in 1986 (9), to name a few.
- Wheat: Due to increased risks posed by climate change and war (10), the risk of fraud in wheat is also rising. Wheat fraud is typically more about misrepresentation than adulteration (e.g., nonorganic products listed as organic, lower quality wheat sold as higher quality wheat, or misrepresentation of the country of origin).
- Honey: Fraud in honey is often in the form of adulteration with less expensive ingredients and misrepresentation of origin (11,12).
- Spices: Ground spices are at high risk of fraud as they are easily adulterated to stretch supply and enhance color. Adulteration with allergens is also known to occur (13).
- Milk: While the risk of adulteration and dilution of milk varies from country to country, one of the most well-known food fraud events in recent history is that of melamine adulteration of milk in China reported in 2008 (14).

References

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Ask the Food Safety Team

Ever have a food safety question you don't know the answer to or for which you would like a second opinion? The Food Safety team is there to help! Just post your question in the "Ask the Brewmasters" section of the community site, and the Master Brewers Food Safety Committee will weigh in or get another expert's answer for you!

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