EXTENSION

FAPC-260

What is flour? Understanding what counts as flour

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In 1938, the United States government needed to get a handle on two things: the nation's food, drug and cosmetic supply and the legal organization of federal rules and decisions. It is almost impossible to fathom today, but federal laws at the time had major gaps in guaranteeing the safety of foods, drugs and cosmetics and protecting them against adulteration. It was common for milk to contain formaldehyde to keep it from spoiling so quickly, and ground coffee to contain cheaper fillers such as ground bone (Lewis, 2024). More than a dozen women were blinded in 1933 after using a permanent mascara called Lash Lure that contained p-phenylenediamine, an untested chemical (National Research Council (US) Committee to Update Science, Medicine and Animals, 2004). In 1937, a sulfanilamide antibiotic in pill and powder forms was showing great results in treating streptococcal infections. Interest in a liquid form of this medicine developed, so a chemist for S.E. Massengill Company found that sulfanilamide was soluble in diethylene glycol (antifreeze). This liquid formulation passed flavor, appearance and fragrance tests and was released for sale. More than 100 people died in 15 states. Toxicity testing for medicines was not required. Although selling a toxic substance was bad for business, it was not illegal (Ballentine, 1981). So, on June 25, 1938, President Franklin D. Roosevelt signed the Federal Food, Drug and Cosmetic Act, which significantly expanded the authority of the Food and Drug Administration (FDA). This new law brought cosmetics and medical devices under federal oversight and required FDA premarket approval of new drugs. Manufacturing facilities for food, drugs and related products could be inspected for safety and quality. The law also corrected abuses in food packaging and quality and mandated legally enforceable food safety requirements and standards of identity (Part II: 1938, Food, Drug, Cosmetic Act, 2018). Food standards of identity would consist of allowed ingredients, the amount in the container, a fixed common name, such as tomato soup, and, at times, guidance demonstrating how a food must be manufactured (Frohlich, 2022).

The effort to create these food identity standards began immediately with a group called the Committee of Standards of Food Purity. Faced with the enormous task of composing standards of identity for U.S. commercial foods, the committee had to determine where to begin. Complaints were rampant across the U.S. regarding canned tomatoes and tomato products. Consumers reported that products were watered down and that there was excessive use of preservatives added to allow processors to use tomatoes that were past their prime for canning. Three months after the formation of the Committee of Standards of Food Purity, the first food standard of identity was written and placed in the first printing of the Code of Federal Regulations (CFR), a codification of federal agency rules and regulations (Smith, 2001). Title 21 of the CFR was reserved for rules of the Food and Drug Administration (Bobka, 1993). The first food standard published was for canned tomatoes and tomato products. These standards were written much like home recipes — perhaps an unusual approach for standards governing manufactured foods — but they provided a beginning to establish quality and safety of the nation's food supply (Gould, W. A., 1966). The second set of food standards covered jams and jellies, released in 1940 (Making Fruit Jelly Kosher: It's Easier Than Ever, 2005). By 1957, food standards were provided for canned vegetables, margarine, eggs, canned tuna, shellfish, canned fruits, dressings, nonfat milk solids, butter, cheese, milk and cream, chocolate, bakery products, flour and cereals/cereal grain products (Food Standards Under the 1938 Food, Drug, and Cosmetic Act: Bread and Jam, 2018).

The standard of identity for flour is found in 21 CFR 137.105. Flour, white flour, wheat flour and plain flour are defined as foods prepared by grinding and bolting cleaned wheat, other than durum wheat and red durum wheat. The regulation also describes the particle size of white flour and allows bleaching agents if bleached flour is desired. The standard for whole wheat flour is

found in 21 CFR 137.200. Whole wheat flour, graham flour and entire wheat flour are defined as foods prepared by so grinding cleaned wheat, other than durum wheat and red durum wheat; so that when tested by the method prescribed in paragraph (c)(2) of this section, not less than 90 percent passes through a 2.36 mm (No. 8) sieve and not less than 50 percent passes through an 850 µm (No. 20) sieve. The proportions of the natural constituents of such wheat, other than moisture, remain unaltered. There are also standards of identity for enriched flour, self-rising flour, instantized flours and enriched self-rising flour. The key takeaway is that, under the federal standard of identity, flour is defined as a product of wheat (Code of Federal Regulations, 2026).

Almond flour, pecan flour, cricket flour, lupine flour and coffee flour can be labeled as flour under 21 CFR Part 102, Subpart A, Common or Usual Names for Nonstandardized Foods (Code of Federal Regulations, 2026). This regulation states that a common or usual name may be used to identify a food that is not subject to a written standard of identity, provided the name is generally understood and not misleading. For example, almond flour is not a standardized food. Therefore, by using the common name "almond flour," the consumer understands the product is a finely ground almond-based ingredient, not standardized wheat flour. That is why non-wheat flours are generally identified by their characterizing ingredient, such as almond flour, pecan flour or cricket flour.

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