



United States Department of Agriculture

Marketing and
Regulatory
Programs

Agricultural
Marketing
Service

Fruit and
Vegetable
Program

Specialty
Crops
Inspection
Division

United States Standards for Grades of Maple Syrup

Effective March 2, 2015

Voluntary U.S. grade standards are issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality. These grade standards are available for use by producers, suppliers, buyers, and consumers. As in the case of other standards for grades of fresh and processed fruits, vegetables, and specialty crops these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

The U.S. grade standards and inspection instructions for all fresh and processed fruits, vegetables, and specialty crops are available on the internet and upon request at the address below. These documents provide detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade standards are issued by the U.S. Department of Agriculture (USDA) after careful consideration of all data and views submitted during rulemaking. The Department welcomes suggestions for improving the standards in future revisions. Comments may be submitted to, and copies of standards and inspection instructions obtained from:

Director, Specialty Crops Inspection Division
Fruit and Vegetable Program,
USDA, Agricultural Marketing Service
1400 Independence Avenue, SW, STOP 0240
Washington, D.C. 20250

Authority: 7 U.S.C. 1621-1627.

Note: Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or with applicable State laws and regulations.

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§52.5961 Product description.

Maple syrup is the liquid food derived by concentrating and heat treating sap from the maple tree (*Acer*) as defined in the U.S. Food and Drug Administration (FDA) Standards of Identity for Maple Sirup (21 CFR 168.140) issued under the Federal Food, Drug, and Cosmetic Act. The solids content of the finished maple syrup shall not be less 66 percent by weight (Brix).

§52.5962 Grades.

(a) **U.S. Grade A** is the quality of maple syrup that:

- (1) Not more than 68.9 percent solids content by weight (Brix);
- (2) Has good uniform color;
- (3) Has good flavor and odor, and intensity of flavor (maple taste) normally associated with the color class;
- (4) Is free from off flavors and odors considered as damage;
- (5) Is free from cloudiness, turbidity, sediment, and is clean;
- (6) No deviants for damage shall be allowed in Grade A.

(b) **Maple syrup for processing (Processing Grade)** means any maple syrup that does not meet Grade A requirements, but meets the requirement of Processing Grade for use in the manufacturing of other products. Maple syrup for processing must be packed in containers of 5 gallons or 20 liters or larger. Processing Grade maple syrup cannot be packaged in consumer-size containers for retail sales (containers of less than 5 gallons).

- (1) May be any color class and any light transmittance; and not more than 68.9 percent solids content by weight (Brix);
- (2) May contain off flavors; and odors;
- (3) May have a very strong taste.

(c) **Substandard** is the quality of maple syrup that fails to meet the requirements of Processing Grade maple syrup.

§52.5963 Recommended Fill of Container.

The amount that a container is filled is not a requirement since the fill of a container is not a quality factor. It is, however, recommended that each container be filled with

syrup as full as practicable and that the product occupy at least 90 percent of the volume of the container.

§52.5964 Color.

General. The color class of maple syrup is determined by:

- (a) The percent of light transmission through the syrup as measured with a spectrophotometer using matched square optical cells having a 10mm light path at a wavelength of 560 nm. The color value is expressed as percent of light transmission as compared to analytical reagent glycerol fixed at 100 percent. Percent transmission is symbolized by “%Tc.”
- (b) Any method that provides equivalent results.

When certifying the color of a sample that has been officially drawn and which represents a specific lot of maple syrup, if the number of color deviants exceeds the acceptance number in the appropriate sampling plan, the lot should be designated as mixed color.

§52.5965 Classification Requirements.

(a) **“Grade A” classification.**

- (1) Possesses a good maple flavor (taste) characteristic of the color;
- (2) Is clean, free from turbidity or cloudiness, and free from off flavors and odors;
- (3) Has good uniform color, which means the syrup color is bright and typical of maple syrup.

“Grade A” Maple syrup has four color and flavor classes

Color classes are associated with specific %Tc values as follows:

Grade A Color Classes	Taste	Light Transmittance (% Tc)
U.S. Grade A Golden	Delicate	≥ 75.0
U.S. Grade A Amber	Rich	50.0-74.9
U.S. Grade A Dark	Robust	25.0-49.9
U.S. Grade A Very Dark	Strong	< 25.0

- (b) **“Processing Grade” classification.** Fails to meet the requirements of Grade A, but possesses a fairly good characteristic maple taste and may contain off-flavors, but is fairly free of damage, fairly free of turbidity or cloudiness, and is fairly clean.
- (c) **Substandard classification.** Maple syrup that fails to meet the requirements of paragraph (b) of this section shall not be graded above Substandard.

§52.5966 Explanation of Terms.

- (a) **Brix** is the percentage by weight concentration of total soluble solids (mainly sugar), of maple syrup when tested with a refractometer calibrated at 68 degrees Fahrenheit and to which any applicable temperature correction has been made; **or** by any other method which gives equivalent results.
- (b) **Buddy flavor** or buddiness (classified as damage), is a disagreeable flavor characteristic of syrup when sap is collected from maple trees as they come out of dormancy. This flavor can be described as tasting chocolaty to bitter chocolaty.
- (c) **Clean** means that the syrup is free from foreign material such as pieces of bark, soot, dust, or dirt.
- (d) **Damage** means any defects that materially affect the appearance, edibility, or quality of the syrup. Badly scorched syrup, buddy syrup, fermented syrup, or syrup that has any off flavors or odors shall be considered as damage.
- (e) **Fermentation** (classified as damage), means the chemical breakdown of a substance by bacteria, yeasts, molds, or other microorganisms.
- (f) **Light Transmittance (Tc)** means the ability of a liquid to transmit light as determined optically by means of a spectrophotometer.
- (g) **Off-flavor** or **off-odor** (classified as damage), means any specific and identifiable or unidentifiable flavor or odor defect that is not normally found in Grade A maple syrup. These flavors or odors may be related to natural factors (e.g., woody or buddy), to manufacturing practices (e.g., burnt, chemical, fermented, scorched), or caused by the presence of any disagreeable flavor or odor that may have developed during handling or storage.
- (h) **Taste** means the **intensity** of maple **flavor**. The descriptors for the taste of **Grade A Maple Syrup** are as follows:
 - (1) **Delicate** means mild maple taste.
 - (2) **Rich** means a full-bodied maple taste of medium intensity.

- (3) **Robust** means stronger maple taste than the lighter colors.
- (4) **Strong** means a maple taste that is stronger than robust.
- (i) **Turbidity or cloudiness** means the presence, in the suspension, of fine particles of mineral matter such as malate of lime, niter, sugar sand, calcium malate, or other substance that detract from the clearness of the syrup.
 - (1) **Malate of lime** means fine particles of mineral matter in maple syrup.
 - (2) **Sugar sand** or **niter** generally means a harmless gritty substance naturally found in maple syrup, and is often referred to as cloudiness.
 - (3) **Calcium malate** results from high calcium and malic acid concentrations in the syrup and is one of the least soluble salts in the syrup.

§52.5967 Determining the Grade of a Lot.

The grade of a lot of maple syrup covered by these standards is determined by the procedures in the **Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Processed Food Products** (7 CFR 52.1 through 52.83).

§52.5968 Reserved.