

DRY-GUD-003.1	Dairy
Revision: 1.0	Butter Grading Classification and Disrating Tables
Approved: 15 April 2021	Related Document Series: DRY-GUD-003 – Factors for Butter Grading

Scope

This document defines the different characteristics of butter used for grading according to Wisconsin standards outlined in ATCP 85.04 and ATCP 85.05. **Table I – Classification of Flavor Characteristics**, is used for initial classification. **Table II – Characteristics and Disratings in Body, Color and Salt** is used to note any disrating characteristics. After totaling the disratings from Table II, refer to **Table III – Relation of Final Wisconsin Butter Grade to Preliminary Flavor Classification as Affected by Total Disrating** to determine the final Wisconsin butter grade. For examples of how these different factors contribute to the final grade, refer to **Table IV – Examples of the Relation of Wisconsin Butter Grade to Flavor Classification and Total Disratings in Body, Color, and Salt Characteristics**.

Definitions

- **Flavor Characteristics:**
 - Acid: the butter lacks a delicate flavor or aroma and is associated with a lactic acid condition, which is present other than as a result of the use of a lactic acid producing culture, but there is no indication of sourness.
 - Aged: the butter is characterized by lack of freshness.
 - Bitter: the butter has an astringent effect, similar to the taste of quinine, and produces a puckery sensation.
 - Coarse: the butter lacks a fine, delicate, smooth flavor.
 - Cooked: a smooth, nutty-like character resembling a custard flavor.
 - Culture: a slightly acid aromatic flavor, characteristic of a lactic acid producing culture.
 - Feed: an aromatic flavor characteristic of the feeds eaten by cows.
 - Flat: the absence or lack of a natural butter flavor.
 - Malty: a distinctive, harsh flavor suggestive of malt.
 - Musty: a flavor which is suggestive of the aroma of a damp vegetable cellar.
 - Neutralizer: a flavor suggestive of bicarbonate of soda or the flavor of similar alkaline compounds.
 - Old Cream: a flavor of aged cream characterized by lack of freshness, and which imparts a rough aftertaste on the tongue.
 - Scorched: an intensified flavor more distinct than “coarse”, and which imparts a harsh aftertaste suggestive of excessive heating.
 - Smothered: a bland flavor suggestive of improperly cooling the cream prior to churning.

- Storage: a flavor characterized by lack of freshness and more intensified than “aged: flavor.
- Utensil: a flavor suggestive of unclean utensils and equipment.
- Weed: an aromatic flavor characteristic of the weeds eaten by cows.
- Whey: a flavor or aroma characteristic of the acid development of cheese whey.
- Aged:
- **Body Characteristics:**
 - Crumbly: the butter particles lack cohesion, have a tendency to break easily and lack plasticity.
 - Gummy: the butter does not melt readily and tends to be adhesive or gum-like.
 - Leaky: beads of moisture appear on cut surfaces of the butter.
 - Mealy or Grainy: a condition which imparts a granular consistency that may be characterized as sandy when the butter is melted on the tongue.
 - Ragged-boring: a sticky-crumbly condition evidenced by the fact that a full sampling trier of butter cannot be drawn.
 - Short: a short-grained texture, lacking in plasticity, and tending toward brittleness, but not to the extent of being “crumbly.”
 - Sticky: possessing excessive adhesiveness and tending to be smeary.
 - Weak: a body texture that lacks firmness and tends to be spongy.
- **Color Characteristics:**
 - Mottled: a dappled condition with spots of lighter and deeper shades of yellow.
 - Speckled: the presence of small white or dark yellow particles of variable number and size.
 - Streaked: the coloration appears as light colored portions surrounded by more highly colored portions.
 - Wavy: means an unevenness in the color that appears as waves of different shades of yellow.
- **Salt Characteristics:**
 - Sharp: the butter is characterized by taste sensations suggestive of salt.
 - Gritty: the butter is characterized by a sand-like feel of grains of undissolved salt on the tongue or between the teeth when the butter is chewed.
- **Intensity:** Any of the above characteristics may be present with one of the following degrees of intensity
 - Slight: means an attribute is barely identifiable and present only to a small degree.
 - Definite: means an attribute is readily identifiable and present to a moderate degree.
 - Pronounced: means an attribute is markedly identifiable and present to a substantial degree.

Table I – Classification of Flavor Characteristics

Identified Flavor	<i>Flavor Classification</i>			
	AA	A	B	Undergrade
Acid	–	s	d	p
Aged	–	s	d	p
Bitter	–	s	d	p
Coarse	–	s	d	p
Cooked	d	–	–	–
Culture	s	d	p	–
Feed	s	d	p	–
Flat	–	s	d	p
Malty	–	–	s	d
Musty	–	–	s	d
Neutralizer	–	–	s	d
Old Cream	–	–	d	p
Scorched	–	–	s	d
Smothered	–	s	d	p
Storage	–	s	d	p
Utensil	–	–	s	d
Weed	–	–	s	d
Whey	–	–	s	d

The letters refer to the intensity of the flavor; s = slight; d = definite; p = pronounced

*See **Definitions** in this document for more details*

Table II – Characteristics and Disratings in Body, Color and Salt

Characteristics	Disratings		
	Slight	Definite	Pronounced
<i>Body</i>			
Crumbly	1/2	1	1 1/2 - 2
Gummy	1/2	1	1 1/2 - 2
Leaky	1/2	1	2
Mealy or Grainy	1/2	1	1 1/2 - 2
Ragged-boring	1	2	2 1/2 - 3
Short	1/2	1	1 1/2 - 2
Sticky	1/2	1	1 1/2 - 2
Weak	1/2	1	1 1/2 - 2
<i>Color</i>			
Mottled	1	2	2 1/2 - 3
Speckled	1	2	2 1/2 - 3
Streaked	1	2	2 1/2 - 3
Wavy	1/2	1	1 1/2 - 2
<i>Salt</i>			
Gritty	1	2	2 1/2 - 3
Sharp	1/2	1	1 1/2 - 2

Table III – Relation of Final Wisconsin Butter Grade to Preliminary Flavor Classification as Affected by Total Disrating

Preliminary Flavor Classification	Total Disrating	Final Wisconsin Grade
Grade AA	1/2	AA
Grade AA	1	A
Grade AA	1 1/2	B
Grade AA	2 or greater	Undergrade
Grade A	1/2	A
Grade A	1	B
Grade A	1 1/2 or greater	Undergrade
Grade B	1/2	B
Undergrade	1/2 or greater	Undergrade

Table IV – Examples of the Relation of Wisconsin Butter Grade to Flavor Classification and Total Disratings in Body, Color, and Salt Characteristics

Flavor Classification	Disratings			Total Disratings	Permitted Total Disratings	Disratings in Excess of Total Permitted	Wis. Grade
	Body	Color	Salt				
AA	1/2	0	0	1/2	1/2	0	AA
AA	1/2	1/2	0	1	1/2	1/2	A
AA	0	1	0	1	1/2	1/2	A
AA	1/2	1	0	1 1/2	1/2	1	B
A	1/2	0	0	1/2	1/2	0	A
A	0	1/2	1/2	1	1/2	1/2	B
A	0	1	0	1	1/2	1/2	B
A	1/2	1/2	1/2	1/2	1/2	1	Undergrade
B	1/2	0	0	1/2	1/2	0	B
B	1/2	1/2	0	1	1/2	1/2	Undergrade

Document History

The most recent changes to this controlled document are listed at the top of the table:

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