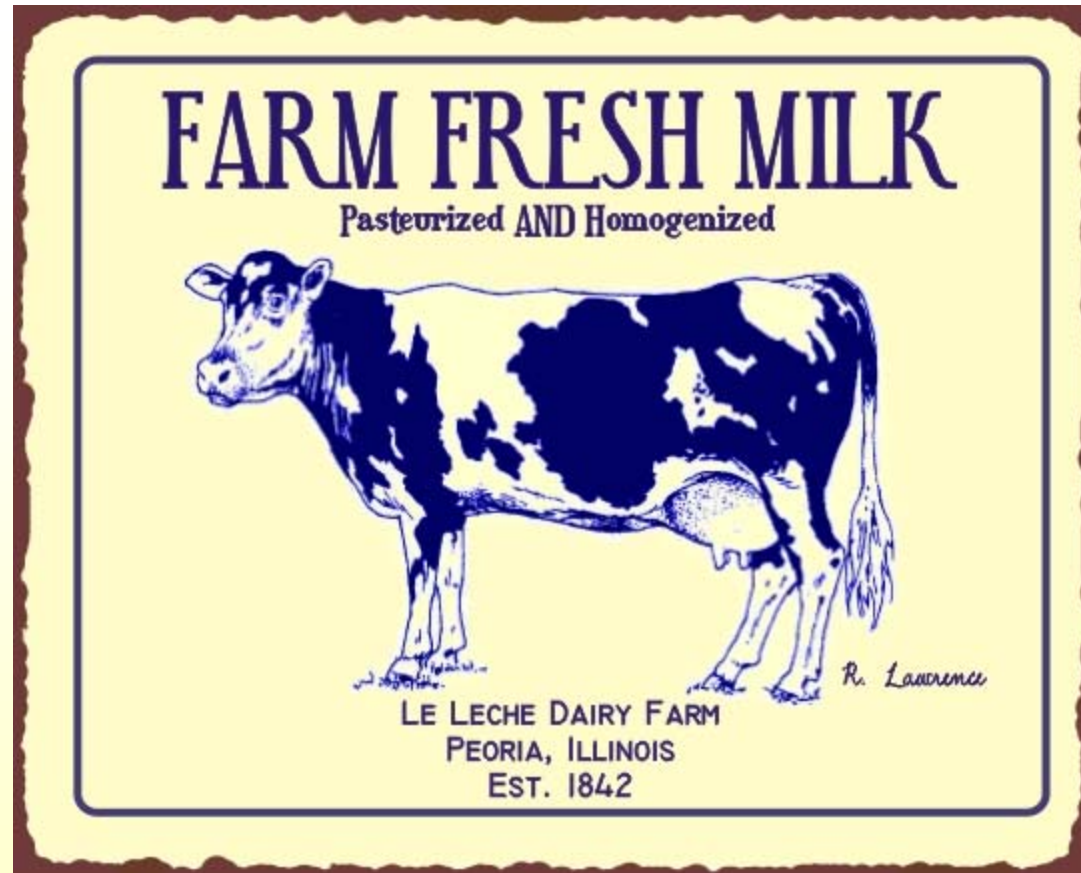


Dairy Products Judging



Why Judge Dairy Foods?

- Become an informed consumer
- To be able to evaluate and identify dairy product defects
- To develop product identification
- To engage in educational opportunities
- To qualify for college scholarships

Who Can Participate?

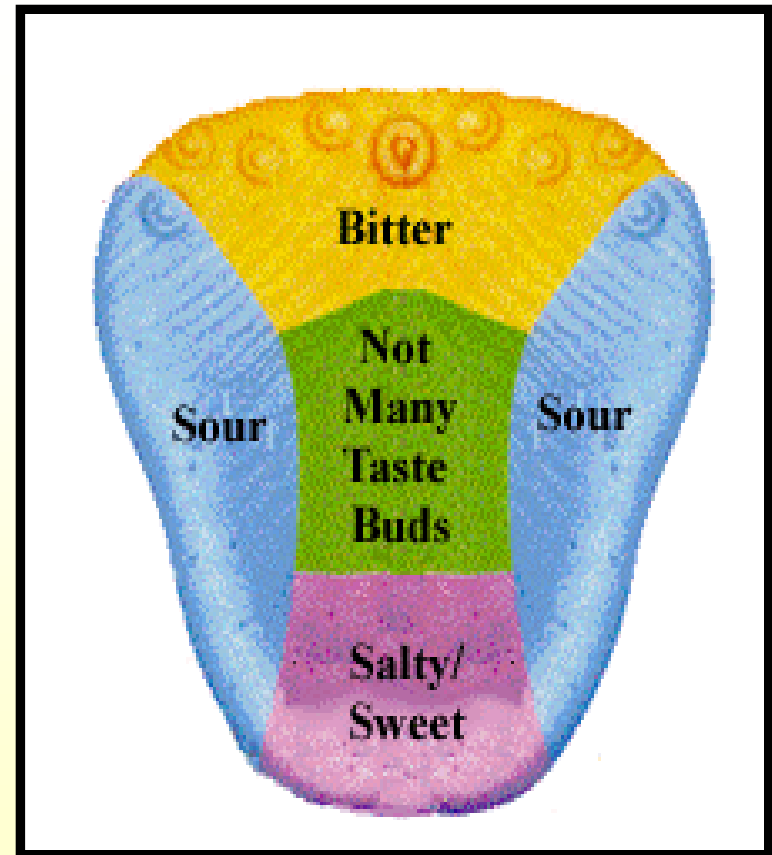
Dairy products judging is a non-qualifying event

- 4-H members
 - Must have been in the 9th-12th grade on January 1 during the calendar year of the state contest
- Teams are made up of 3 to 4 members
 - There is no limit as to the number of teams that may participate from a county



Taste Buds

- Four basic kinds of tastes:
 - sweet, salty, sour, and bitter
- Salty/sweet taste buds:
 - front of your tongue
- Sour taste buds:
 - line the sides of your tongue
- Bitter taste buds:
 - back of your tongue



Dairy Products Judging

- Milk
- Cheddar Cheese
- Ice Cream
- Real vs. Artificial Products



Milk

Pleasantly sweet & cleans up well

Cooked

- Results from heating milk during pasteurization
- Flavor is identified by taste and especially by the sense of smell
- Flavor resembles boiled custard

Flat

- Generally, water added to milk causes a flat flavor and diluted taste
- The characteristic flavor of normal milk is lacking, but the milk has no *off-flavor*
- Flavor is flat, tasteless, and tastes watered down

Malty

- May be found in milk not properly cooled
- Improperly cleaned milking equipment, bacteria cause the objectionable flavor
- Described as a walnut or grape-nut flavor

Garlic/Onion

- Garlic or onion flavors are transferred into milk when cows eat or smell wild garlic or onions
- You can recognize these flavors by their distinctive tastes and odors
- Important to smell all samples before tasting them

Acid

- Easily detect the high-acid flavor by smell and taste
- Acid milk results from bacterial growth (generally *Streptococcus lactis*)
- Develops rapidly if raw milk is not properly cooled
- Flavor is characterized by a sharp, sour taste on the tongue

Fermented/Fruity

- Flavor resembles vinegar, pineapple, or other fruit
- Bacteria and yeast are responsible for development of this off flavor
- It is easily detected by smell

Lacks Freshness

- This deterioration in flavor is due to the growth of psychrophilic bacteria
- It may be due also to an enzymatic or chemical action that occurs in old milk
- Flavor may be described as lacking in clean flavor because of age, it coats the mouth

Oxidized

- Resulting in a chemical reaction primarily involving the milk fat
- Develops when milk is placed in a clear container and left in the sun or artificial light in a store cabinet
- Oxidized flavor has been described as tasting like wet cardboard

“Perfect 10 Milk”

- Pleasantly sweet, cleans up well in your mouth
- The best milk you have ever tasted
- No recognizable defects
- Typically in a *light free* container

TENNESSEE 4-H DAIRY
PRODUCTS EVALUATION

MILK

Contestant No.: _____

County/Team No.: _____

Division: *IsSc* _____

Date: ____ / ____ / ____

		Sample Number					
POSSIBLE CRITICISMS		1	2	3	4	5	
FLAVOR	<i>PROCESSED</i>						
	COOKED	X				P	
	FLAT		X			E	
	MALTY			X		R	
	<i>ABSORBED</i>					F	
	PUT A CHECK IN THE BOX OF THE FLAVOR CRITICISMS THAT YOU DETECT	CARLIGIONION				X	C
		<i>BACTERIAL</i>					
		ACID					M
		FERMENTED/FRUITY					I
		<i>CHEMICAL</i>					L
		LACKS FRESHNESS					K
		OXIDIZED					
SCORE (5 points for 1 correct mark, 0 points if any incorrect mark is present)							
TOTAL SCORE							



Cheddar Cheese

“Pleasantly nutty and slightly acidic.”



Cheese Aging Process

- Mild : 2-3 months
- Medium: 4-7 months
- Sharp: 8-12 months
- Extra Sharp: 12-36 months
- 10 lbs of milk = 1lb of cheese & 9 lbs whey

Acid

- Flavor results from the development of too much acid at any stage of cheese making or curing
- You can detect it by smell and taste
- The taste is found on the sides of your tongue

Bitter

- A true bitter flavor is distasteful and resembles Quinine
- It is picked up by the back of the tongue and mouth
- Bitter flavor almost always results from high acid, causing excess proteolysis
- You can detect this flavor by the sense of taste, and the sensation persists for some time

Fermented/Fruity

- The taste is generally sweet, resembles overripe fruit
- The flavor is often associated with high moisture
- Odor may be more important than taste in detecting this flavor

Flat

- A young cheese
- Lacks flavor or tasteless
- Lacks richness

Whey or Whey Taint

- Flavor is described as a slightly dirty, sweet-acid taste
- It is sometimes confused with high acid
- Whey taint lasts longer than acid taste which disappears rapidly
- Flavor is characterized as dirty socks

Rancid

- It is caused by the activity of the enzyme lipase that yields butyric acid.
- It is more likely that you will find this defect in aged cheese.
- The rancid flavor is soapy and disagreeable.

Sulfide

- This odor results from hydrogen sulfide being released as a by-product of bacterial fermentation or enzymatic action on the protein
- You can detect sulfide odor readily by passing the cheese under your nose
- The odor is similar to that of boiled eggs

TENNESSEE 4-H DAIRY
PRODUCTS EVALUATION

CHEDDAR CHEESE

Contestant No: _____
 County/Team No: _____
 Division: *10/50* _____
 Date: ____ / ____ / ____

	POSSIBLE CRITICISMS	Sample Number				
		1	2	3	4	5
FLAVOR	<i>CULTURE SYSTEM</i>					
	ACID	X	X	X		X
	BITTER				X	X
PUT A CHECK IN THE BOX OF THE FLAVOR CRITICISMS THAT YOU DETECT	FERMENTED/FRUITY	X			X	
	FLAT		X	X		
	<i>PROCESS RELATED</i>					
	WHEY TAINT	X				
	<i>STORAGE DEFECTS</i>					
	RANCID				X	X
	SULFIDE					
SCORING	Number of correct attributes marked (A)	1	1	0	0	1
	Number of attributes in product + incorrect marks by contestant (B)	3	2	2	3	3
	Score = (A/B) X 5	1.7	2.5	0	0	1.7
	TOTAL SCORE					

Total Score: 5.9

Examples

- | | |
|--|----------------------|
| 1. Cheese is fat and whey. Panelist marks fat. | Score: 1/2 X 5 = 2.5 |
| 2. Cheese is fat. Panelist marks whey and fat. | Score: 1/2 X 5 = 2.5 |
| 3. Cheese is fat and whey. Panelist marks fat and sulfide. | Score: 1/3 X 5 = 1.7 |
| 4. Cheese is acid, bitter, and sulfide. Panelist marks acid and bitter. | Score: 2/3 X 5 = 3.3 |
| 5. Cheese is acid, bitter, and sulfide. Panelist marks acid, bitter, and whey. | Score: 2/4 X 5 = 2.5 |

Ice Cream



Full Fat/ Premium Ice Cream

- Federal standards require ice cream to contain a minimum of
 - 10% milk fat (about 7 grams (g) of fat per ½ cup serving)
 - 20% total milk solids by weight.
- Some premium ice creams contain 16% milk fat

Low or No Fat Ice Cream

- Low Fat Ice Cream:
 - 3 grams of fat or less per serving
- Fat Free Ice Cream:
 - Less than 0.5 grams of fat per serving

Low or No Fat Frozen Yogurt

- There are no specific standards for frozen yogurt, its ingredients and characteristics can vary
- Frozen yogurt is pasteurized before freezing so it generally does not contain live, active cultures like many unfrozen yogurts
- Frozen yogurt may be soft (as in cones or sundaes) or hard-frozen

TENNESSEE 4-H DAIRY
PRODUCTS EVALUATION

**FROZEN DESSERT
IDENTIFICATION**

Contestant No: _____

County/Team No: _____

Division: ~~6/8~~ _____

Date: ____ / ____ / ____

PRODUCT (3 POINTS PER PRODUCT)

1	ICE CREAM (FULL FAT OR PREMIUM)	<u> X </u>	LOW OR NO FAT ICE CREAM	<u> </u>
2	ICE CREAM (FULL FAT OR PREMIUM)	<u> </u>	LOW OR NO FAT ICE CREAM	<u> X </u>
3	ICE CREAM (FULL FAT OR PREMIUM)	<u> </u>	LOW OR NO FAT FROZEN YOGURT	<u> X </u>
4	NATURAL FLAVORED VANILLA ICE CREAM	<u> X </u>	ARTIFICIALLY FLAVORED VANILLA ICE CREAM	<u> </u>
5	NATURAL FLAVORED VANILLA ICE CREAM	<u> </u>	ARTIFICIALLY FLAVORED VANILLA ICE CREAM	<u> X </u>
	TOTAL SCORE			
		PERFECT SCORE = 15		

Real vs. Artificial



Creamer vs. Half & Half

- Half & Half Coffee Cream
 - Milk, cream, sodium citrate, sodium phosphate
- Non-Dairy Creamer
 - Water, corn syrup solids, partially hydrogenated soybean or cottonseed oil, sodium caseinate, dipotassium phosphate, polysorbate 60, sodium stearoyl lactylate, artificial flavor, carrageenan, artificial color

Whipped Cream vs. Topping

- Whipped Cream
 - Cultured cream, skim milk, enzymes
- Whipped Toppings (non-dairy)
 - Cultured non-fat milk, cultured milk, whey protein concentrate, food starch modified, artificial color, gelatin, natural flavor, potassium sorbate, vitamin A palmitate, enzymes

Cheese vs. Cheese Food

- Pasteurized Process Cheese:
 - Pasteurized milk, cheese culture, salt, enzymes, annatto
- Pasteurized Process Cheese Spread/Food
 - Veggie milk (filtered water, organic soymilk solids, organic tofu), isolated soy protein, brown rice maltodextrin and protein, evaporated cane juice, sea salt, oat fiber, vegetable mono- and diglycerides, vitamin-mineral blend (tricalcium phosphate, vitamin A palmitate, vitamin C, ferric orthophosphate, vitamin E, vitamin D3, vitamin B6, vitamin B12, folic acid), casein, unhydrogenated canola vegetable oil, natural flavors, sodium phosphate, tricalcium phosphates, corn starch, sea salt, citric acid, sorbic acid, beta apo carotenal

Butter vs. Margarine

- Butter
 - Cream, salt, annatto
- Margarine (non-dairy)
 - Liquid soybean oil, partially hydrogenated soybean oil, water

TENNESSEE 4-H DAIRY
PRODUCTS EVALUATION

REAL VS ARTIFICIAL

Contestant No: _____

County/Team No: _____

Division: ~~6/8~~ _____

Date: ____ / ____ / ____



PRODUCT (3 POINTS PER PRODUCT)				
10% FAT SPREAD	BUTTER REAL	X _____	MARGARINE	_____
WHIPPED TOPPING	ARTIFICIAL	_____	WHIPPED CREAM	X _____
CREAMER	ARTIFICIAL	_____	HALF AND HALF	X _____
CHEESE PRODUCT	PASTEURIZED PROCESS CHEESE REAL	X _____	PASTEURIZED PROCESS CHEESE SPREAD/FOOD	_____
TOTAL SCORE				
	PERFECT SCORE = 12			

Preparing Samples

- Use the strictest hygienic practices
- Wash hands before preparing samples
- Use thoroughly washed & sanitized containers
- Label all samples with date & content
- Have the samples at the proper temperature

Preparing to Judge

- **Be in physical & mental condition for scoring**
 - Never eat a heavy meal or foods with strong flavors
 - Avoid hot drinks that might scald your tongue
 - Rinse out your mouth with plain water
 - Scrub your hands, using an unscented soap
- **Know the scorecard**

Preparing to Judge

- **Observe the aroma immediately**
 - Some aromas disappear when exposed to air
 - Quickly smell the aroma of the sample immediately after you remove it
- **Take a sufficient volume into the mouth for tasting**
 - Do not pass judgment on a product without adequately tasting it
 - Hold each sample approximately the same length of time in the mouth. Avoid holding the sample in the mouth past a count of five

Preparing to Judge

- **Recondition the mouth occasionally**
 - You should clean your mouth at intervals or when an aftertaste persists. This can be done by rinsing your mouth with clean, room temperature water.
- **Concentrate upon the sample you are examining**
 - Close your eyes and mind to the world and concentrate on your taste buds. Make a mental record of your taste and smell reactions.
- **Do not be too critical**
 - Carefully observe the taste and aroma of the sample, but do not form the questionable habit of trying to find objectionable flavors that may not be present. When in doubt, do not criticize.

Preparing to Judge

- **Check your own scoring occasionally**
 - This can be done by comparing the flavor of two or more identically scored samples and observing whether the flavors are scored consistently.
- **Be honest with yourself**
 - Judge the sample itself. Do not be influenced by the name, the trademark on the package, or by the score previously given a like product from a particular processor.
- **Recognize the fact that you need practice and experience to develop judging ability.**