



# LOUISIANA FFA

CAREER DEVELOPMENT EVENT  
**MILK QUALITY &  
PRODUCTS**

# Milk Quality and Products Career Development Event

**Purpose:** The Milk Quality and Products CDE provides the student the opportunity to identify and learn to determine the quality of dairy foods. This knowledge could be helpful in producing, processing, buying and selling dairy foods.

## Objectives:

1. To develop students' abilities to utilize knowledge of high quality milk production and marketing.
2. To develop students' abilities to utilize knowledge of the composition and quality characteristics of raw and pasteurized milk.
3. To develop students' understanding to the causes and control of mastitis, its influences on milk quality and yield and the use of mastitis detection methods in controlling the disease in production of abnormal milk.
4. To develop the students' understanding that clean cows and a clean environment are necessary to produce quality milk.
5. To develop students' ability to identify cheese varieties.
6. To develop the students' ability to identify and evaluate the flavor quality of milk.
7. To develop the students' ability to identify defects in milker unit parts that affect milk quality.

## Contest Format

The event can include:

Part I - One class of each:

- A. No more than 10 milk samples to be scored on flavor (taste and odor).
- B. No more than 10 cheese samples to be identified.

Part II - One class of:

- A. No more than 10 fat content samples to be scored.
- B. Milk fat content of fresh milk products (30 min) - 20 points

Part III-Written Test

- A. A Written test consisting of no more than 50 objective type questions from the updated test bank shall be given.

# Rules and Regulations

**All Scoring for this event will follow the National Scoring Rules. (Revised 2019)**

1. All general rules apply except as indicated in the specific rules for this event.
2. Contestants will be allowed up to 2 1/2 hours for completion of the event.
3. Milk Flavor Identification and Evaluation (120 Points—6 points for flavor ID, 6 points for intensity score) (Revised 2019)
  - i. Milk samples will be scored using *Milk Scoring Guide* as updated on the National FFA CDE website. (Revised 8/06) Prior to the event, the official judges will score one or more samples of milk and explain scoring to the contestants. All samples of milk are prepared from pasteurized milk intended for table use and will score 1 to 10. Milk samples will be tempered to 60 degrees F.
  - ii. Contestants are to use whole numbers when scoring "Flavor" of Milk. Check only the one most serious defect in a sample; even if more than one flavor is detected. If no defect is noted, check "No Defect". See Milk Scoring Guide
4. Cheese Identification (100 Points) (Revised 2019)
  - i. Ten cheese samples for identification will be selected from those listed. Cubes of the cheeses will be available for tasting. Note: More than one sample of a given cheese may be used. A score of four points is given for each variety correctly identified. Uncolored cheeses may be used. (40 points possible) (Revised 2019)
  - ii. In addition to identifying cheese samples, participants will classify characteristics of identified cheeses using the following matrix. Participants will have six characteristics to select based on the 10 identified cheese samples. An example cheese characteristic problem can be found in the Reference section of this handbook. (60 points possible). (Revised 2019)

References for cheese identification include:

- a. "Cheese" National Dairy Council; 6300 N. River Road, Rosemont, IL 60018.
- b. "Cheese Varieties" USDA Handbook 54 (1969): 0-356-511), the latest edition, superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402
- c. "How to Buy Cheese" USDA Home and Garden Bulletin #193 (1971: 0100-1411) Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20242 (Revised 2015, 2018)

5. Product Identification—Dairy versus Non-Dairy (100 points—6 points identification, 4 points fat content) (*Revised 2019*)
  - a. A total of 10 samples consisting of dairy and non-dairy products will be identified and assigned a milk-fat content score.
  - b. The following products may be included among the samples:
    - i. Dairy Products: nonfat (skim) milk (.05%), lowfat milk (1.0%), reduced fat milk (2%), milk (3.25%), half and half (10.5%), butter (80%), sour cream (18%), flavored milk (0.05%–3.25%) light whipped cream (30%), heavy cream (36%). (*Revised 2019*)
    - ii. Non-Dairy Products: margarine, non-dairy creamer, non-dairy sour cream, non-dairy milk, non-dairy flavored beverage and non-dairy whipped topping. All of these are to be categorized as non-dairy fat. (*Revised 2019*)
6. Utensils for sampling will be provided - - cups, spoons, etc.
7. The score made by each contestant is the number of points deducted; therefore, the lower the score, the higher the rating.
8. Water will be available to contestants.
9. Scantron scorecards will be used for this event. (*Adopted 2018*)
10. Recommended references to study for written tests on the area and state levels are as follows:
  - a. "Questions and Answers on Federal Milk Marketing Orders", USDA, Agricultural Marketing Service, Bulletin AMS 559 (latest edition) (*revised 8/06*)
  - b. Farmer's Bulletin 2259, "Judging and Scoring Milk and Cheese: Dairy Division FSQS, USDA (*revised 8/06*)
  - c. "Dairy Facts" (Use previous year's issue.) Available from Milk Industry Foundation. (*Revised 8/06*)
12. Tie Breakers: (applied in the following order)
  - a. Exam score
  - b. Cheese Identification score
  - c. Milk flavor identification score

# Milk Scoring Guide

Scores may range from 1 to 10 on a quality basis:

<b>10</b>	<b>Excellent (no defect)</b>
<b>8 to 9</b>	Good
<b>5 to 7</b>	Fair
<b>2 to 4</b>	Poor
<b>1</b>	Unacceptable/unsalable

## EXAMPLE: MILK FLAVOR

Defects	Scores*		
	Slight	Definite	Pronounced
Acid	3	2	1
Bitter	5	3	1
Feed	9	8	5
Flat/Watery	9	8	7
Foreign	5	3	1
Garlic/Onion	5	3	1
Malty	5	3	1
No defect	10	10	10
Oxidized	6	4	1
Rancid	4	2	1
Salty	8	6	4

*\*Suggested scores are given for three intensities of flavor. All numbers within the range may be used. Intermediate numbers may also be used; for example, a bitter sample of milk may score four.*

# Cheese Matrix

A description of major varieties of cheeses popular among American consumers.

Variety	Moisture (%)	Fat (%)	Pasta	Brine/Surface	Ripened by	Origin
Blue/Bleu	46	50	no	yes	mold	France
Brie	52.5	20	no	no	bacteria and mold	France
Cheddar Mild	39	50	no	no	bacteria	England
Cheddar Sharp	39	50	no	no	bacteria	England
Colby	40	50	no	no	bacteria	US
Cream	55	33	no	no	unripened	US
Feta	60	42	no	yes	bacteria	Greece
Gouda/Edam	45	48	no	yes	bacteria	Netherlands
Havarti	54	30	no	no	bacteria	Denmark
Gruyere	39	45	no	yes	bacteria	Switzerland
Monterey Jack	44	50	no	no	bacteria	US
Mozzarella	60	45	yes	yes	bacteria	Italy
Muenster	46	50	no	no	bacteria	France
Parmesan	32	32	no	yes	bacteria	Italy
Processed	40	50	no	no	bacteria	US
Provolone	45	45	yes	yes	bacteria	Italy
Queso Fresco	59	18	no	no	unripened	Mexico
Ricotta	73	4	no	no	unripened	Italy
Swiss	41	43	no	yes	bacteria	Switzerland

<sup>1</sup>Some cheeses have a range in moisture permitted, but these are the highest permitted amounts.

<sup>2</sup>Some cheese standards use percentage by weight of total solids (e.g., cheddar) while others use percentage by weight of the cheese (e.g., cream).

<sup>3</sup>Curd is stretched in hot water to align the protein molecules and provide stretch to the curd

# Cheese Characterization Example Problem

## CHEESE CHARACTERIZATION EXAMPLE PROBLEM

The six items in the "characteristics" column are based on the information found in the [Cheese Characterization Matrix](#) in this handbook.

Cheese samples are from the cheese identification activity. Participants will select all characteristics that apply to each sample. Answers will be recorded on the event-specific scan form. Characteristics in the problem can change each year.

Characteristics	Sample Numbers				
	1 (Cheddar)	2 (Cream)	3 (Swiss)	4 (Mozzarella)	5 (Bleu)
A. Maximum moisture = 39%	X				
B. Minimum fat in the solids = 33%		X			
C. Receives "pasta filata treatment"				X	
D. Salted in brine				X	
E. Ripened by molds					X
F. Originated in England	X				

# Scoring

The event will be worth 2,608 total points based on positive-type scoring.

Activity	Points/Sample	Samples	Individual Points	2024 Individual Points	Team Points
Milk flavor identification and evaluation	12 points/sample (6 points for flavor defect 6 points for intensity)	10 samples	120	120	480
Product identification	10 points/sample (6 points for identification 4 points for milk fat)	10 samples	100	100	400
California Mastitis Test (CMT)	8 points/sample (2 points per increment**)	5 samples	40	40	160
Minnesota Easy® Culture	7 points/ sample	5 samples		35	140
Cheese type identification	10 points/sample (4 points per type 6 points for characteristics)	10 samples	100	100	400
Problem-solving	6 points/question	12 questions	72	72	288
Written exam	3 points/ question	40 questions	120	120	480
<i>Total Possible Individual Points</i>			552	587	2,208/ 2,348
<i>Team Activity</i>					400
<b>TOTAL POINTS PER TEAM</b>					2,608/ 2,748

**\*\*CMT Samples are scored 0-8 in 2-point increments. Individual results are compared to official results to determine a final score. A deduction of 2 points is assigned for each increment deviation from the official score.**