

Dairy Foods CDE

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I. Overview

- A. To develop abilities to utilize knowledge of high quality milk, its production and marketing.
 - 1. Milk Production – (1) Regulations; (2) Grades and classes of milk.
 - 2. Cooling Milk
 - 3. Developing Marketing and Marketing Concepts – (1) Trends, (2) Economics, (3) Supply and demand.
 - 4. Federal Milk Marketing Orders, Economics, and Distribution – (1) Transportation; (2) Cooperatives; (3) Pricing.
 - 5. Off Flavors of Milk
- B. Develop abilities to utilize knowledge of the composition and quality characteristics of milk.
 - 1. Nonfat Solid Portion
 - 2. Milkfat
 - 3. Adulterants, Including Water
- C. Be able to utilize selected skills to identify cheese varieties.
- D. Be able to utilize selected skills in evaluating the flavor quality of milk.
- E. Be able to utilize selected skills to differentiate dairy products from non-dairy products (imitations and substitutes).

II. Rules

- A. Each chapter shall enter a team composed of three or four participants with the top three scores counting for the team score. Team members must all be members of the same FFA chapter.
- B. Each participant will participate in all phases of the event.
- C. Participants and FFA advisors shall report to the registration desk at the North Fayette High School by 7:30 a.m. or before on event day.
- D. The scoring method has been changed to positive scoring. The team/individual with the highest total points will be the winner. Score cards reflect this change.
- E. The event will consist of six parts:

Part I (40 minutes)

Forty (40) objective-type questions consisting of 30 questions on milk production and marketing general knowledge and 10 questions on analyzing and interpreting from charts or graphs. Each question will be worth 1 point each.

Part II (20 minutes)

Analyze samples with the California Mastitis Test for somatic cell or mastitis count.

Part III (25 minutes)

Ten (10) milk samples will be evaluated on flavor and flavor intensity.

Part IV (25 minutes)

- 1. Ten (10) identification samples of real and artificial dairy foods/products to be identified by appearance, taste and/or odor.
- 2. Ten (10) cheese samples to be identified by appearance, taste and/or odor. (Small cubes and a slice will be displayed.)

Part V. (25 minutes)

Students will judge milking equipment according to cleanliness and proper working order.

Part VI. (30 minutes)

Team Activity – The team activity will be a milk pricing problem that involves the evaluation of milk components like somatic cell count, butterfat, protein, off flavor, milk titrations, antibiotic levels, milk handling, or other factors involved in the pricing of milk. This would not be part of the individual score but added to the team score. The test will be set up in sections so points could be awarded as partial credit for correct answers achieved and needed in coming to the final solution. The team activity will be worth 100 points.

- F. There may be a repeat of samples within an event activity – milk samples, real and artificial dairy foods/products, and cheese identification.
- G. Answer sheets, worksheets, and other materials will be furnished for each event phase.
- H. Utensils for sampling will be provided—cups, spoons, etc. Participants may not provide their own utensils.
- I. Exhibits will be left in place following the event so that FFA chapter advisors and others can view exhibits and take pictures.

Event Activities

- A. Forty (40) objective-type questions consisting of 30 questions on milk production and marketing general knowledge and 10 questions on analyzing and interpreting from charts or graphs. Each question will be worth 1 point each.
- B. Ten (10) milk samples will be scored.
 - 1. Prior to the event, the event official will provide one no-defect sample of milk to each participant.
 - 2. All samples of milk are prepared from pasteurized milk intended for table use.
 - 3. Milk flavors for this event are:

Bitter	Garlic/Onion	Rancid
Feed	High Acid	Salty
Flat/Watery	Malty	No Defect
Foreign	Metallic/Oxidized	

- 4. After identifying the flavor/odor of the milk sample:
 - a. Check (x) the one most serious defect in the sample even if more than one flavor or odor is detected. If no defect is noted, check “No Defect.”
 - b. Check only one intensity level for each sample. The intensity level for “No Defect” shall be scored “Pronounced.” Check (x) Pronounced for samples with no defect.

- C. Identification of dairy foods/products and substitutes listed on answer sheet. Participants will have an opportunity to see and taste samples.

a. Butter
b. Whipped Cream
c. Half and Half
d. Process American Cheese
e. Sour Cream
f. Frozen Yogurt (Vanilla)
g. Ice Cream (Vanilla)

h. Margarine
i. Whipped Non-Dairy Topping
j. Coffee Whitener
k. Process Imitation Cheese
l. Low Fat Sour Cream
m. No Fat Ice Cream (Vanilla)
n. Imitation Chocolate Milk

o. Chocolate Milk
p. Yogurt (Plain)
q. Cottage Cheese

- D. Ten (10) cheese samples for identification will be selected from those listed on the answer sheet. Participants will have an opportunity to see and taste samples.

a. Blue	f. Colby	k. Muenster
b. Brick	g. Cream	l. Processed American
c. Brie/Camembert	h. Edam/Gouda	m. Provolone
d. Cheddar (Mild)	i. Monterey Jack	n. Swiss
e. Cheddar (Sharp)	j. Mozzarella	

- E. Analyze samples with the California Mastitis Test (CMT) for somatic cell or mastitis count.
1. The CMT will be scored using a scorecard. Samples should be scored using even numbers from 0 to 8 inclusive. See below “Scoring Guide for the California Mastitis Test.”
 2. Four samples of milk will be evaluated for abnormality, using the CMT.

CMT Test Score	Appearance	Participant Score*
Negative	Mixture liquid, no precipitate	0
T	Slight precipitate tend to disappear with paddle movement	2
1	Distinct precipitate but does not gel	4
2	Distinct gel formation	6
3	Strong gel formation, which tends to adhere to paddle. Forms distinct central peak.	8
* Participant scores only even numbers for CMT test.		

- F. Four sets of milker unit parts to be scored on defects using the computerized scorecard. The flexible plastic parts are to be scored as rubber parts and rigid plastic or glass parts are to be scored as metal parts. Participants will be permitted to bring and use flashlights. Students are to utilize a 0.5-point deduction for each defect identified. Units may have multiple defects.

In accordance with the dairy foods industry, the score made by each participant is the number of points deducted when compared to the official score; therefore, the lower the score, the higher the rating.

Defects

Rubber parts - dirty or milkstone	0.5
Rubber parts - checked or blistered	0.5
Rubber parts – leaky	0.5
Rubber parts - poorly fitted	0.5

Defects

Metal parts - dirty or milkstone	0.5
Metal parts - dented or damaged	0.5
Metal parts - pitted or corroded	0.5
Metal parts - open seam	0.5

A combination of undesirable factors may score the milker unit zero. Each display of milker parts is scored as a unit, both inside and outside. Display boards are not to be handled. Participants will score each item and indicate the defect in the proper column on the score sheet.

This activity will be worth 32 points.

- G. Team Activity – The team activity will be a milk pricing problem that involves the evaluation of milk components like somatic cell count, butterfat, protein, off flavor, milk titrations, antibiotic levels, milk handling, or other factors involved in the pricing of milk. This would not be part of the individual score but added to the team score. The test will be set up in sections so points could be awarded as partial credit for correct answers achieved and needed in coming to the final solution. The team activity will be worth 100 points.

III. Resource Information

- A. “Milk Flavor Defects,” Iowa State University of Science and Technology, FT-1000, Ames, Iowa 50011.
- B. “National Dairy Promotion and Research Board Annual Report” (updated annually – use the previous year’s issue), National Dairy Promotion and Research Board, 2111 Wilson Boulevard, Suite 600, Arlington, Virginia 22201.
- C. “Newer Knowledge of Cheese and Other Cheese Products,” National Dairy Council, Rosemont, Illinois 60018, pages 1-23.
- D. “Milk Facts,” (updated annually – use the previous year’s issue) International Dairy Foods Association, Milk Industry Foundation, 1250 H St., NW, Suite 900, Washington, D.C. 20005
- E. “Questions and Answers on Federal Milk Marketing Orders,” United States Department of Agriculture, Agricultural Marketing Service, Bulletin AMS 559. Latest edition, Washington, D.C. 20050.
- F. CMT Supplies can be found at:
- Lextron Animal Health - <http://www.lextronanimalhealth.com/?blocid=102>
 - Nasco Farm and Ranch - <http://www.enasco.com/farmandranch/>
 - Local Farm Store

Additional resources will be emailed prior to the event

IV. Scoring and Ranking of Teams and Participants

- A. To determine the individual and team winners of the Dairy Foods Career Development Event, the participants will be ranked on the total score of Parts I, II, III, IV, V, and VI. Teams and individuals will be ranked into groups designated “Gold,” “Silver,” and “Bronze.” Only the top three team members’ scores will count for team score. The top three scores will count in each division or category regardless of overall individual ranking used in computing the overall team score. All team members are eligible for individual awards. Teams which do not have three members will be listed as “Participants.” Teams which violate any rule will also receive a “Participation” rating.

Phase	Score
I. Test & Milk Facts	40
II. California Mastitis Test	32
III. Milk Samples	40
IV. A. Dairy Foods - Real vs. Artificial	20
IV. B. Dairy Foods - Cheese Samples	20
V. Milking Equipment	32
Total Individual Score	184
IV. Team Activity	100
Total Team Score Possible (3 Participants)	652

- B. In the event of a tie in the total point score of an individual or team, the tie shall be broken by awarding the highest placing to that individual or team having the highest ranking in the milk flavor section of the event. If a tie still exists, the real and artificial dairy foods/products identification score will be used to break it followed by the cheese identification score, and finally by the written test. Ties in divisions or categories will be broken by overall team/individual scores.
- C. The high FFA team in the Dairy Foods Career Development Event will be named the “Iowa Champion FFA Dairy Foods Judging Team” and will be eligible to enter the National FFA Dairy Foods Career Development Event in Indianapolis the following October.

V. Awards

Awards listed below are at the discretion of the sponsor and pending availability of sponsorship. It is vitally important that participants write thank you letter to sponsors in order to retain their support. A thank you list naming current sponsors will be provided to each participating chapter at the event site.

Awards Sponsored Through the National FFA Foundation	
Champion Team	State Winning Plaque
Awards Sponsored Through the Iowa FFA Foundation	
Champion Team	Cash Award for Travel to National FFA Convention
Reserve Champion Team	Plaque
Top Ten Teams	Rosettes
Members of Top 10 Teams	Rosettes
Top Ten Individuals	Rosettes
1st and 2nd Place Individuals	Plaques
Top Team and Top Individual	Plaques
a. Written Test	
b. Analyze and Interpret	
c. California Mastitis Test	
d. Milk Sample Evaluation	
e. Foods/Products, Imitations, Substitutes	
f. Cheese Identification	
g. Milking Equipment	
h. Team Activity	
All Teams/Individuals	Certificates