



IOWA

FFA ASSOCIATION

MILK QUALITY & PRODUCTS **Career Development Event** **This is a Skills CDE**

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**AG SKILLS CAREER DEVELOPMENT EVENT
GENERAL POLICIES, RULES, RESULTS AND STANDARDS**

***Violations of any of the following rules may be grounds for the disqualification of the participants.**

I. Board Policies

The following board policies (<http://www.iowaffa.com/ffaboardpolicies.aspx>) apply directly or in part to Skills CDEs:

- Board Policy #2: Changes in Judging Event Answer Keys
- Board Policy #3: Changes to Judging Event Results
- Board Policy #11: Substitution of Team Members
- Board Policy #25: Advancement of Teams to National FFA Competition
- Board Policy #27: Use of Electronic Storage/Transmission Devices

II. Eligibly of Chapters and Participants

1. Each state event is open to all FFA chapters in good standing with the Iowa FFA Association. (Exception: Soils Career Development Event is open to the top five teams from each district competition.)
2. Local FFA advisors or their designee entering teams in the state event must register their intent to have a team on Iowa FFA On-Line (<http://anfmp01.dmac.edu/fmi/webd#>) by the due dates and registration fees listed below:
 - a. Before 14 days prior to the event No Charge
 - b. Between 14 days prior and day of the event \$50.00An invoice will be sent to the chapter for the appropriate entry fees at the end of the season.
3. A chapter may enter a separate team in each event held on a particular day. However, no member may participate in more than one Ag Skills Career Development Event on a particular day.
4. After an FFA Advisor registers the chapter's intent to enter a team, the names of the team members are expected to be entered on the Iowa FFA On-Line (<http://anfmp01.dmac.edu/fmi/webd#>) by noon three days prior to the event. Any member not listed on Iowa FFA On-Line will need to be registered as an FFA member using the National FFA MyFFA Account (<https://www.ffa.org>). Changes to online entries may be made the day of the event. State and National FFA Dues will be invoiced in accordance with Iowa FFA Association policies and by-laws.
5. A participant, at the time of his/her participation in the state event and selection as a national team member, must:
 - a. Be a current bona fide dues paying FFA member in good standing with the local chapter, state FFA Association and the National FFA Organization at the time of the career development event in which he/she participates.
 - b. Be a middle school or high school FFA member, (a graduating senior is considered eligible to compete in state and national career development events up to and including their first national convention following graduation). Middle school refers to students in grades 7-8 and high school refers to students in grades 9-12.
 - c. Have been enrolled in high school Agricultural Education during the current/most recent school year with the following exceptions: Meats, Livestock, Dairy Cattle and Milk Quality & Products-must have been enrolled the previous school year or be in grades 8-12 for the current year.
 - d. Currently be an active FFA member of the chapter making entry into the event.
6. A member may not participate in both a state 4-H and state FFA Career Development Event when said events are held on the same day.
7. Participation in one Ag Skills Career Development Event of its type will not exclude an active FFA member from participating in the future Ag Skills Career Development Event, if the participant still qualifies as a middle school or high school FFA member (Rule 5b) providing he/she was not on a state championship FFA CDE team or a national FFA participant in the said event.
8. No student may participate in more than one Career Development Event each year at the national level.

9. For the Soils Career Development Event, each district FFA advisor must email all results including a list of participants for each of the top five teams to the State FFA Executive Director within one business day of the district event.

III. Event Room Conditions

10. Accommodations for participants can be made upon request of the FFA Advisor. The accommodation form must be submitted no less than 14 days prior to the respective event.
11. Any communication, verbal or non-verbal between participants during a career development event will be sufficient cause to eliminate the team member involved from the career development event. The only exception to this would be communication between team members during the team activity portion of a given career development event.
12. Any assistance given to a team member from any source other than the career development event officials or assistants will be sufficient cause to eliminate the team from the career development event.
13. No extra FFA members or other persons are permitted to view the state event until the completion of the event. The only people allowed in the event area during the event are participants and designated event workers. Observers and FFA advisors who are not working with the event will not be permitted in the event area while the event is in progress. The following are exceptions to this rule: the presentation portions of the Marketing Plan CDE and Ag Communications CDE at the Iowa FFA Leadership Conference.

IV. Participant Assignments

14. Each participant will be given an individual ID number by which he/she will be designated throughout the event. Contestant badges with identification numbers may be issued.
15. Teams will be divided into groups for individual activities. When possible, groups will be assigned to avoid having two participants on the same team in the same group.
16. Each participant will work on an individual basis throughout the event except during the FFA chapter team activity. Each team will submit one score card or product per team for the team activity.

V. Equipment and Dress Code

17. Participants are urged to bring and use clipboards during events to facilitate the holding of placing and grading cards. The clipboards are to be clean and free of markings. A few sheets of blank paper will be permitted for taking notes and recording results.
18. Calculators may be used with the Career Development Events. They must be battery or solar operated, non-programmable and silent, unless otherwise listed in the specific Career Development Event rules.
19. Items needed for specific phases of a Career Development Event will be noted under their specific rules.
20. Participants are expected to observe the National FFA Code of Ethics and the Proper Use of the FFA Jacket during the career development events found in the Official FFA Manual (<https://www.ffa.org/about/who-we-are/official-manual>).
21. Official FFA dress is expected for all participants when appropriate. If official dress is not appropriate, official casual dress should be worn. Official casual dress shall consist of 1) FFA t-shirt or polo shirt and 2) khaki or nice denim pants or shorts.

VI. Event Results

22. In the event that ALL participants' scores are incorrect the board reserves the right to correct the results.
23. Each FFA advisor will receive the judging cards, score cards, answer sheets and results following a career development event and the presentation of awards. FFA advisors are not permitted to pick up event packets until after the awards presentation.

VII. AFNR Career Cluster Content Standards

AFNR Content Standards are specifically outlined within each respective Skills CDE.

Milk Quality & Products

2020 Chairperson: Tammy Schnieders, Manchester

CDE Coordinator: Stephanie Clark, Iowa State University

Committee Personnel: Louise Fleming, Vinton; Dawn Mausser, Dyersville

Scoring Coordinator: TBA

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 the amounts of fat in milk.

II. AFNR Content Standards

FPP.01.*Standard:* Develop and implement procedures to ensure safety, sanitation and quality in food product and processing facilities.

FPP.01.02.*Indicator:* Apply food safety and sanitation procedures in the handling and processing of food products to ensure food quality.

FPP.02.*Standard:* Apply principles of nutrition, biology, microbiology, chemistry and human behavior to the development of food products.

FPP.02.01.*Indicator:* Apply principles of nutrition and biology to develop food products that provide a safe, wholesome and nutritious food supply for local and global food systems.

FPP.03.*Standard:* Select and process food products for storage, distribution and consumption.

FPP.03.01.04.c*Advanced Measurement:* Evaluate and grade food products from different classifications of food products.

III. Event 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 by 9:30 a.m. or before on event day.
- D. The team/individual with the highest total points will be the winner.
- E. The event will consist of six parts:
 - 1. **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.
 - 2. **Part II (20 minutes):** Analyze samples with the California Mastitis Test for somatic cell or mastitis count.
 - 3. **Part III (25 minutes):** Ten (10) milk samples will be evaluated on flavor and flavor intensity.

4. Part IV (25 minutes)
 - a. Ten (10) identification samples of milk products (dairy versus non-dairy).
 - b. Ten (10) cheese samples to be identified by appearance, taste and/or odor. (Small cubes and a slice will be displayed.)
 5. Part V. (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, milk fat, 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.

IV. Event Format

- A. General Knowledge. (40 minutes total) 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 (40 points total).
- B. Milk Defects. (25 minutes total) Ten (10) milk samples will be scored. Each correctly identified sample is worth two (2) points. Each correct intensity sample is worth two (2) points. One (1) point will be awarded for intensities marked within one (1) level of the correct answer.
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 fluid consumption.
 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 Milk Products. (25 minutes total)
1. Ten (10) identification samples of dairy versus non-dairy samples. Each sample is worth 2 points.

Dairy Products

- | | | |
|-------------------------------|--------------------------|------------------------------|
| a. Nonfat (skim) Milk (0.05%) | d. Half and Half (10.5%) | g. Flavored Milk (3.3%) |
| b. Reduced Fat Milk (2.0%) | e. Butter (80%) | h. Light Whipped Cream (30%) |
| c. Milk (3.25%) | f. Sour Cream (18%) | i. Heavy Whipped Cream (35%) |

Non-Dairy Products

- | | |
|-------------------------|--------------------------------|
| a. Margarine | d. Non-Dairy Milk |
| b. Non-Dairy Creamer | e. Non-Dairy Flavored Beverage |
| c. Non-Dairy Sour Cream | f. Non-Dairy Whipped Topping |

2. Ten (10) cheese samples for identification will be selected from those listed on the answer sheet. The samples are to be identified by appearance, taste and/or odor. (Small cubes and a slice will be displayed.) Each sample is worth 2 points.

- | | | | |
|------------------|----------|------------------|-----------------------|
| a. Blue | e. Colby | i. Havarti | m. Parmesan |
| b. Brie | f. Cream | j. Monterey Jack | n. Processed American |
| c. Cheddar Mild | g. Feta | k. Mozzarella | o. Provolone |
| d. Cheddar Sharp | h. Gouda | l. Munster | p. Swiss |

D. California Mastitis Test. (25 minutes total)

- Analyze samples with the California Mastitis Test (CMT) for somatic cell or mastitis count.
- 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.”
- 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. A correct score is worth 8 points. A CMT test that is one away from the official, is worth 6 points, etc.		

E. 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.

V. Event Resources

- “Milk Flavor Defects,” Iowa State University of Science and Technology, FT-1000, Ames, Iowa 50011.
- “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.
- “Newer Knowledge of Cheese and Other Cheese Products,” National Dairy Council, Rosemont, Illinois 60018, pages 1-23.
- “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
- “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.
- 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 Supply Store

VI. Scoring and Ranking of Teams and Individuals

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 violate any rule will also receive a “Participation” rating.

<u>Phase</u>	<u>Score</u>
I. Test & Milk Facts	40
II. California Mastitis Test	32
III. Milk Samples	40
IV. A. Milk Products – Identification	20
B. Milk Products – Cheese Samples	20
Total Individual Score	152
VI. Team Activity	100

Total Team Score Possible (3 Participants) 556

- 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 Milk Quality & Products Career Development Event will be named the “Iowa Champion FFA Milk Quality & Products Judging Team” and will be eligible to enter the National FFA Milk Quality & Products Career Development Event the following October.

VII. Awards

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. Knowledge Exam and Problem Solving	
b. Milk Products (ID & Cheese)	
c. Milk Quality (Defects & CMT)	
d. Team Activity	
All Teams/Individuals	Certificates

VIII. Event Materials