



Milk Quality and Products

Purpose

The New Jersey FFA Milk Quality and Products Career Development Event aims to promote practical learning activities in milk quality and dairy products while assisting students in developing team decision-making skills.

The New Jersey FFA Milk Quality and Products CDE focuses on raw milk quality, dairy products, federal milk marketing orders and attributes of selected milk products. The five general areas that contribute to milk quality and consumer demand are:

- Milk production.
- Milk and dairy product composition, quality, and safety.
- Milk processing or manufacturing.
- Raw milk marketing.
- Facility operations:
 - Safety/sanitation.
 - Labor.

Objectives

This event will provide the participant with the ability to do the following:

Utilize knowledge of milk quality related to

- Producing quality milk:
 - Regulations
 - Grades and classes of milk
 - Factors necessary to produce quality milk
- Cleaning and sanitizing:
 - General types of cleaners and sanitizers
 - Water hardness
 - Milk stone
 - Approved milking equipment and design
 - Proper milking procedures
- Cooling milk
- Identifying diseases transmitted to consumers via milk
- Recognizing causes of off flavors in milk

Utilize knowledge of milk pricing related to

- Marketing and marketing concepts:
 - Pricing trends
 - Economics
 - Supply and demand
- Federal milk marketing orders, economics and distribution:
 - Transportation costs
 - Cooperatives
 - Pricing

Utilize knowledge of the composition and quality characteristics of raw and pasteurized milk and milk products including

- Determining milk composition
 - Nonfat solids portion:
 - Milkfat
 - Adulterants, including water
 - Bacterial standards and testing
 - Quality testing

- Understanding the causes and control of mastitis, its influences on milk quality and cheese yield and the use of mastitis detection methods in controlling the disease, specifically including the following:
 - Causes
 - Prevention
 - Detection (California Mastitis Test and Direct Microscopic Somatic Cell Count)
 - Treatment
 - Understand products made from milk, regulations and standards to ensure quality and safety, and marketing of dairy products and their alternatives to consumers.
 - Regulatory programs
- Identification of cheese varieties and characterize properties.
- Identification flavor defects and evaluate milk quality.
- Understanding the importance of dairy food safety programs.
- Identification and comparison of dairy vs. non-dairy products.

Event Rules

The complete rules, policies and procedures relevant to all New Jersey FFA Career and Leadership Development Events may be found in the CDE & LDE Event Participation Policy:

https://nj.gov/agriculture/ag_ed/ffa/activity/CDE_LDE_Policy.pdf

- A student may not compete in more than one event during the New Jersey FFA Fall Career Development Events.
- All student participants in New Jersey FFA events (CDEs/LDEs, Leadership Conference, State Convention, etc.) are **required** to complete the **Release Form, Student Agreement, and Emergency Information** in AET.
- Teams will consist of four members, and all four scores will count toward the team score.
- The team score is comprised of the combined scores of each individual and the team activity in which all team members will participate.
- Official Dress is required for this event.
- Participants are not to use strong deodorant, perfume, chewing gum or other detractors to the taste and smell senses.
- Participants are NOT allowed to use (or have visible) electronic devices during the event, unless for medical reasons or a portion of the event requires usage. This includes cell phones, smart watches, tablets, etc. Participants will be allowed to use basic function calculators, if specified for that event; however, cell phone calculators, programmable and graphing calculators are not permitted!
Failure to adhere to these rules will result in disqualification.
- All individuals participating will judge in a cooperative manner following the rules set forth by the event coordinator.
- No school/chapter will use Rutgers University or Delaware Valley University or Mercer County Community College facilities or locations for the training of teams. Contact with University faculty and staff is permissible. **Penalty will be disqualification.**
- This event will be scored using "Scan-tron" sheets. It is important for students to listen to directions and fill out the sheets correctly in order to receive credit. Sample scan-tron sheets are available for practice on the State Activity Guide. This event uses the Forestry scan-tron sheet.
- There will be no separate alternate teams.
- The State level competition fee of \$14 per contestant will be paid by the competing school. If a chapter is at least **blue** affiliated, registration to state FFA career/leadership development events is waived.
- **Allergy Information:** Food products used in this event may contain or come in contact with potential allergens. Any participant in need of a reasonable ADA accommodation(s) for their participation in the Milk Quality and Products CDE should complete the online Request for Reasonable accommodations Form: <https://form.jotform.com/NJFFA/accommodations-request>
This form must be received 3 weeks prior to the start of the event. All requests will remain confidential, and the participant will be contacted by a New Jersey FFA staff member to gather additional information and/or discuss the reasonable accommodation(s) or assistance being requested. The event coordinator will make all reasonable efforts to accommodate students with food allergies.

Event Format

EQUIPMENT

Materials to be provided by the student:

- Two no. 2 pencils
- Bottled water and/or palate cleanser
- Basic Function Calculator
- Clipboard

Participants are **not** to bring these items:

- Glass of any kind to the event
- Programmable or graphing calculators
- Cell phones, smart watches, or other electronic devices

EVENT SNAPSHOT

Below is a brief overview of the Milk Quality & Products CDE

This event consists of five (5) phases:

- Phase 1: Team Activity – 100 points (30 minutes)
- Phase 2: Written Exam - 120 points (30 minutes)
- Phase 3: Problem Solving – 72 points (30 minutes)
- Phase 4: Milk Flavor Identification and Evaluation: 120 points (15 minutes)
Product Identification: 100 points (15 minutes)
- Phase 5: Cheese Identification: 100 points (15 minutes)
California Mastitis Test: 40 points (15 minutes)

A chapter must have a team of four (4) for team awards. All four (4) scores are used in determining the team's rank.

Scantron will be used to score this event. At the end of this document is a sample of the sheet used, highlighting where to enter answers. You can get practice sheets here:

https://nj.gov/agriculture/ag_ed/ffa/activity/479-6-MQP.pdf

TEAM ACTIVITY

Team members will work together to determine producer milk acceptability based on some or all of the tests listed below. Teams may have to perform the acceptability tests or analyze test results given and information provided.

Examples of acceptability tests include the following:

- | | |
|---|-------------------------|
| • Recent producer history | • Sample temperature |
| • Percent TA (acidity) | • Sample freezing point |
| • DMSCC (Direct Microscopic Somatic Cell Count) | • Equipment |
| • SPC (Standard Plate Count) | • Sanitation |
| • PI count (Preliminary Incubation Count) | • Food safety |
| • Antibiotic screening test | |

INDIVIDUAL ACTIVITIES

Written exam (120 Points)

The written exam will be comprised of a total of 40 multiple-choice items. The exam will be given in two parts with one part consisting of twenty (20) questions on quality milk production and a second part of twenty (20) questions on milk marketing.

Problem Solving (72 Points)

The problem-solving test will consist of a total of 12 critical-thinking, multiple-choice questions. Topics may include, but are not limited to:

- Decisions about the quality and acceptability of milk.
- Calculations of the value of milk and components of milk.
- Decisions about components of milk and milk products (including processing procedures).
- Decisions about the use of chemicals in cleaning and sanitizing operations.
- Standardization of components of milk and milk products.

Milk Flavor Identification and Evaluation (120 Points — 6 points for flavor ID, 6 points for intensity score)

- Ten milk samples will be scored on flavor defect (taste and odor) using the computerized scorecard. Check only the predominant defect in a sample even if more than one flavor is detected (all samples of milk are prepared from pasteurized whole vitamin D milk intended for table use). Milk samples will be tempered to 60 degrees F. Only those cups provided at the event may be used. (Six points per correct answer.)
- Participants are to use whole numbers when scoring "Defect Intensity." If no defect is noted, participants should check "No defect" and score as a ten (See Scoring Guide below). (Six points per correct answer.)

Palate cleansers (e.g., apples, apple juice, soda crackers, or water in transparent bottles) will be allowed for refreshing. Palate cleansers will NOT be provided by NJ FFA.

SCORING GUIDE

Refer to the current scorecard being used at the state level.

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

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

EXAMPLE: MILK FLAVOR

Defects	Scores*		
	Slight	Definite	Pronounced
Acid	3	2	1
Bitter	5	3	1
Cooked	9	8	7
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.*

Product Identification — Dairy versus Non-Dairy (100 points — 6 points identification, 4 points fat content)

- A total of 10 samples consisting of dairy and non-dairy products will be identified and assigned a milk-fat content score.
- The following products may be included among the samples:

Dairy Product	Fat Percentage	Non-Dairy Product	Fat Percentage
Nonfat (skim) milk	≤0.50%		
Low fat or Reduced Fat Milk	1.0 – 2.0%	Non-Dairy (milk substitute) Beverage	Non-Dairy Variable Fat
Whole Milk	≥3.25%		
Half & Half	10.5%	Non-Dairy Creamer	Non-Dairy Variable Fat
Butter	80.0%	Margarine	Non-Dairy Variable Fat
Sour Cream	18.0%	Non-Dairy Sour Cream	Non-Dairy Variable Fat
Nonfat (skim) Flavor-Added Milk*	<0.50%		
Low fat or Reduced Fat Flavor-Added Milk*	1.0 – 2.0%	Non -Dairy (milk substitute) Flavor-Added Beverage*	Non-Dairy Variable Fat
Whole Flavor-Added Milk*	≥3.25%		
Whipped Cream (Aerosol or Commercially Whipped)**	Dairy Variable Fat†	Non-Dairy Whipped Topping (Aerosol or Commercially Whipped)**	Non-Dairy Variable Fat
Heavy Cream (liquid)	≥36.0%		
Yogurt	≥3.25%	Non-Dairy Yogurt	Non-Dairy Variable Fat

*Flavor-Added means additional flavoring (for example, but not limited to –Vanilla, Chocolate, Strawberry) has been added to the base milk or base Non-Dairy (milk substitute) beverage. For example, 1) whole cow's milk flavored with chocolate = Whole Flavor-Added Milk and 2) Oat beverage flavored with chocolate = Non-Dairy (milk substitute) Flavor-Added Beverage.

**Commercially whipped could include cream whipped mechanically prior to CDE event if consistency can be maintained throughout the CDE.

†Dairy Variable Fat is only used for Whipped Cream.

California Mastitis Test (40 Points)

- The California Mastitis Test will be scored using even numbers from 0 to 8 inclusive. (See below for the Scoring Guide for the California Mastitis Test.)
- Five samples of milk will be evaluated for abnormality, using the California Mastitis Test method.
- A bacterial culturing component will be added to CMT.
 - On-Farm Culture systems can provide dairy producers with a quick, simple, and inexpensive way to identify the likely bacterial cause of clinical mastitis and are becoming more commonly used in the industry. This information can then be used in guiding clinical mastitis treatment decisions. Participants will assess images of Tri-plates of the Minnesota Easy® Culture System to evaluate the sample as 1) Contaminated, 2) No Growth, 3) Gram Negative, 4) Staphylococcus species, 5) Staphylococcus aureus, 6) Streptococcus species, or 7) Streptococcus agalactiae. One image will be provided corresponding to each of the 5 CMT milk samples.

SCORING GUIDE

CMT Test Score	Appearance	Participant Score	* Somatic Cell Count
Negative	Mixture liquid, no precipitate	0	0
T	Slight precipitate tends to disappear with paddle movement	2	200–300,000
1	Distinct precipitate but does not gel	4	400–500,000
2	Distinct gel formation	6	1,200,000 – 1,500,000
3	Strong gel formation, which tends to adhere to paddle. Forms distinct central peak	8	Over 5,000,000

**Reference*

Cheese Identification (100 Points)

- 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)
- 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).

Cheese Characteristics Matrix

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

Variety	Moisture (%) (Maximum) ¹	Fat (%) (Minimum) ²	Pasta Filata ³	Brine/Surface Salted	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
Gruyere	39	45	no	yes	bacteria	Switzerland
Havarti	54	30	no	no	bacteria	Denmark
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 American	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

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

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

³Curd is stretched in hot water to align the protein molecules and provide stretch to the curd.

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 >35%	X		X	X	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 2,448 total points based on positive-type scoring.

Activity	Points/Sample	Samples	Individual Points	Team Points
Milk flavor identification and evaluation	12 points/sample (6 points for flavor defect 6 points for intensity)	10 samples	120	480
Product identification	10 points/sample (6 points for identification 4 points for milk fat)	10 samples	100	400
California Mastitis Test (CMT)	8 points/sample (2 points per increment**)	5 samples	40	160
On Farm 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	400
Problem solving	6 points/question	12 questions	72	288
Written exam	3 points/question	40 questions	120	480
<i>Total Possible Individual Points</i>			587	2,348
			<i>Team Activity</i>	100
			TOTAL POINTS PER TEAM	2,448

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

TIEBREAKERS

If ties occur, the following events will be used to determine award recipients:

INDIVIDUAL

1. Milk Identification Score
2. Cheese Identification Score
3. Product Identification Score
4. Problem Solving Score

TEAM

1. Team Activity
2. Total Score Milk Identification
3. Total Score Cheese Identification

Awards

Awards will be presented to individuals and the first team based on their rankings at the CDE awards ceremony at the New Jersey State FFA Convention. Awards are sponsored by the National FFA Foundation and the New Jersey FFA Association.

Individual

- Overall Medals
 - Medals – Top three individuals
- H.O. Sampson Certificates (hands-on practicum areas ONLY)
 - Certificate – Top five individuals

Team

- Plaque Sponsored by the National FFA Organization - 1st place

The 1st place team will represent New Jersey at the Big E in September and the National FFA Convention in October.

References

This list of references is not intended to be all-inclusive. Other sources may be utilized, and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation.

- Past CDE materials and other resources are available on [FFA.org](https://www.ffa.org)
- Hoard's Dairyman, P.O. Box 801, Fort Atkinson, Wisconsin 53538. Phone (414) 563-5551. Issues used are from November of previous year to May of current year.
- California Mastitis Test published by the University of Missouri-Columbia Extension Division, Columbia, Missouri 65211. <https://extension.missouri.edu/publications/g3653>
- California Mastitis Test kit can be ordered from MMP Farm Supply Store, <https://www.mimilk.com/product/california-mastitis-test-cmt/> 1996 Gover Parkway, Mt. Pleasant, MI 48858; Phone: 989-317-8370; Toll-free: 887-367-6455; Fax: 989-317-8372
- Dairy Business <http://dairybusiness.com/> 7. Agricultural Marketing Service, <https://www.ams.usda.gov/market-news> search Dairy & Milk Products. Issues used are from November of previous year to May of current year.
- Dairy Foods: Producing the Best, Dr. Robert Marshall; Instructional Materials Laboratory, <https://ffa.app.box.com/v/Dairy-Foods-Booklet>
- The Dairy Practices Council: Guidelines, <http://www.dairypc.org/>
 - #021 – Raw Milk Quality Tests
 - #024 – Troubleshooting High Bacteria Counts of Raw Milk
 - #038 – Preventing Off-Flavors in Milk
 - #071 - Prevention of and Testing for Added Water in Milk
 - #098 – Milking Procedures for Dairy Cattle
- Pasteurized Milk Ordinance, <https://ncims.org/wp-content/uploads/2024/08/2023-pmo.pdf>
 - Section 1. Definitions
 - Section 6. The Examination Of Milk And/Or Milk Products
 - Section 7. Standards For Grade "A" Milk And/Or Milk Products
 - Item 15p. Protection From Contamination
 - Appendix E. Examples Of 3-Out-Of-5 Compliance Enforcement Procedures
 - Appendix G. Chemical And Bacteriological Tests
 - Appendix K. HACCP Program
 - Appendix N. Drug Residue Testing And Farm Surveillance
 - Appendix T. Preventative Controls for Human Food Requirements for Grade "A" Milk and Milk Products

NOTE: In the document, items followed by a "P" referred to the Pasteurized side while items followed by an "R" refer to the Raw side.

- Code of Federal Regulations Title 21, Part 131 – Milk and Cream, <https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-131?toc=1>
- Code of Federal Regulations Title 21, Part 133 – Cheeses and Related Cheese Products, <https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-133?toc=1>
- Swab Procurement: Hygiena PRO-Clean Rapid Protein Residue Test. 25 of the swabs come in a sealed aluminum foil envelope. Product information is available here: <https://www.hygiena.com/hygiene-monitoring/protein-residue/pro-clean> Another possibility is to contact a local dairy processing plant laboratory and ask the lab tech if they would either have some available or be able to order them for the school.
- [Standard Methods for the Examination of Dairy Products](#), 18th edition. By Jeffrey L. Kornacki (Editor), Elliot T. Ryser (Editor), Cynthia M. Mangione (Editor), H. Michael Wehr (Editor), American Public Health Association, 800 I Street, NW, Washington, D.C. 20001-3710, www.apha.org © 2024 by the American Public Health Association

Related Endorsed Activities

We are partnering with other organizations to create a variety of [National FFA Endorsed Activities](#). These activities are not limited to FFA members. Recognition will not take place at national convention and will be at the discretion of the partner organization. More information about National FFA Endorsed Activities can be found [here](#).

- **The DeBruce Foundation's Agilities™:** Discover the skills that will help you succeed in school. CDEs, LDEs, and future careers! The DeBruce Foundation's Agilities™ resources help you understand your strengths and interests, explore career possibilities, and build strong teams. Visit [Agilities.org](#) to learn more and access free resources or take the 15-minute Agile Work Profiler™ assessment, [here](#).
- **DEKALB Agricultural Accomplishment Award:** Bayer Crop Science is proud to support the National FFA Organization by sponsoring the 79th annual DEKALB Agricultural Accomplishment Award. The DEKALB Agricultural Accomplishment Award is awarded to one FFA student (senior) per chapter who exemplifies scholarship, commitment, work ethic and passion for pursuing a career in agriculture. These students demonstrate promising young talent and are the rising stars of agriculture. Students are nominated for this award by their FFA advisors.
- **Make48:** The Make48 Innovation Experience is a hands-on, problem-solving challenge designed to bring innovation to classrooms. Students work in teams to tackle real-world challenges, creating prototypes and pitching ideas that meet specific criteria provided by industry partners. Participating schools will have the opportunity to compete in a national bracket, showcasing their prototypes on a larger stage and competing to earn an invitation to a regional playoff and featured on Make48's long-running television series.

Milk Production and Related Careers

Fresh raw milk should possess a sweet bland flavor, be free of feed flavors and contain a low number of somatic cells and bacteria. Mixed milk from several cows (herd milk) is expected to contain approximately 4.0 percent milk fat, 3.2 percent protein and 4.8 percent lactose, the main characterizing constituents. Milk is the most important source of calcium in the diet of the average American, supplying approximately 70 percent of the dietary calcium. The production of high-quality raw milk requires the following:

- Clean and healthy cows.
- Equipment that is constructed appropriately from approved materials.
- Proper installation, cleaning, sanitizing and operation of the equipment.
- Rapid cooling of milk in compliance with regulatory requirements.
- Delivery of milk to the processor within 48 hours.
- Prevention of milk adulterants such as water, antibiotics, pesticides, cleaning and sanitizing chemicals, medicinal agents and any other extraneous materials.
- Application of tests for acceptability of milk.

Students considering a career related to the subject matter in this CDE may wish to consider that persons of the following groups contribute to the successful production of high-quality milk and milk products:

- Dairy farmers and herd managers manage and milk cows and prepare milk for dealers.
- Field representatives of the buying and/or selling organizations provide advice to producers and promote milk quality for buyers.
- Milk sanitarians enforce public health regulations.
- Food technologists apply chemical, physical, microbiological and sensory tests to determine the quality and safety of milk and milk products.
- Manufacturers and dealers of dairy equipment supply and service equipment.
- Suppliers of chemicals used in cleaning and sanitizing provide chemicals and advice on proper use.
- Veterinarians treat diseased animals and advise producers on disease prevention.
- Milk plant operators process milk into the finished product for consumers.
- U. S. Food and Drug Administration manages the regulation of grade A milk.
- U. S. Department of Agriculture manages the regulation of manufacturing grade milk and provides grading services to manufacturers of butter, cheese and nonfat dry milk.
- Officials and technicians of the USDA Federal Milk Marketing Orders sample, test and account for milk marketed under federal orders. They also apply regulations to marketing raw milk.
- State departments of agriculture and/or public health manage the public health regulations applied to milk at the

state level.

- State dairy extension agents provide advice to dairymen regarding production and sale of milk.
- Accountants and financial advisors with knowledge of the milk industry.
- Dairy food scientists improve and develop new dairy food products and testing methods for quality and food safety.
- Agricultural economists with a knowledge of milk pricing, exporting and milking procedures of dairy cattle.
- Dairy food nutritionist international marketing specialist with bilingual abilities
- Feed nutritionists.
- Information technologists.
- Milk haulers evaluate, sample, and transport milk and milk products to manufacturing plants.

Request for Reasonable Accommodations

The New Jersey FFA Association is committed to providing equal access to our events and activities for all people. Use this form to request a reasonable accommodation or assistance at least 3 weeks before any state-level events: <https://form.jotform.com/NJFFA/accommodations-request>. A new form will need to be submitted for each event in which a reasonable accommodation is being requested. This information will be kept confidential and will be used only to process the request. Our staff will review the request upon receipt and contact the requestor with additional information. The association cannot guarantee accommodations or assistance if a form is received less than 3 weeks before an event. Accommodations being requested that require the assistance of another person (nurse, interpreter, scribe, reader, etc.) is the responsibility of the school/requestor. It is also the school/requestor's responsibility to provide any approved equipment to aide in the accommodation process, if applicable. This also includes **any food allergies** a student/advisor/chaperone may have that is attending this Career/Leadership Development Event/Conference/Convention.

Artificial Intelligence (AI) Policy and Guidelines

The standard operative procedures allow FFA members to use AI tools to assist them in their learning. Appropriate uses of AI may include generating ideas for any FFA-related assignment, project, contest and award application; checking facts of a phenomenon; or checking for and correcting grammatical errors in a paper written by a member. Specific guidelines for appropriate use, including examples, is provided in the policy. To ensure clarity, a statement outlining ethical AI utilization will be added to program handbooks. Non-compliance with this policy represents plagiarism and will automatically disqualify a member.

Please visit the State Activity Guide, [Artificial Intelligence \(AI\) Policy 1.007](#) to view the full guidelines and best practices.

Professional Integrity

FFA members participating in New Jersey FFA programs and events understand and agree that all work must result from their own effort and ability, created, and completed alone (except for partner or chapter applications). When outside sources (direct quotes or phrases, specific dates, figures, or other materials) are used for a project, document, or application, the required reference citation must be completed according to the rules specified by the applicable handbook.

While participating in National FFA programs, FFA members are prohibited from:

- Plagiarizing
- Violating copyright
- Cheating
- Falsifying information
- Using another person's results or thoughts as their own, even with this person's permission. This includes work done by a family member or a mentor.
- Using information or data obtained from the internet without proper citation.

Any attempt to gain an unfair advantage will not be tolerated. Non-compliance represents plagiarism and will automatically disqualify a member.

Teamwork Accuracy of Results

100 POINTS

Five of the eight possible tests may be selected with a value of 20 points each.

Indicator	Total Points
Standard Plate Count (SPC) <i>15 for count 5 dilution</i>	
Preliminary Incubation Count (PIC) <i>15 for count 5 dilution</i>	
Somatic Cell Count (SCC)	
Temperature	
Beta-lactam Antibiotic test	
Freezing point	
Titrateable Acidity (%TA)	
Sanitation Swab	
TOTAL POINTS EARNED OUT OF 100 POSSIBLE	

Milk Quality and Products #479-7

Incorrect Marks Correct Mark



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Team #	Last Name	First Name
0		
1	A	A
2	B	B
3	C	C
4	D	D
5	E	E
6	F	F
7	G	G
8	H	H
9	I	I
0	J	J
1	K	K
2	L	L
3	M	M
4	N	N
5	O	O
6	P	P
7	Q	Q
8	R	R
9	S	S
0	T	T
1	U	U
2	V	V
3	W	W
4	X	X
5	Y	Y
6	Z	Z

Code
0
1
2
3
4
5
6
7
8
9

Team Name / Additional Information

Written Exam					
1	A B C D E	21	A B C D E	41	A B C D E
2	A B C D E	22	A B C D E	42	A B C D E
3	A B C D E	23	A B C D E	43	A B C D E
4	A B C D E	24	A B C D E	44	A B C D E
5	A B C D E	25	A B C D E	45	A B C D E
6	A B C D E	26	A B C D E	46	A B C D E
7	A B C D E	27	A B C D E	47	A B C D E
8	A B C D E	28	A B C D E	48	A B C D E
9	A B C D E	29	A B C D E	49	A B C D E
10	A B C D E	30	A B C D E	50	A B C D E
11	A B C D E	31	A B C D E	51	A B C D E
12	A B C D E	32	A B C D E	52	A B C D E
13	A B C D E	33	A B C D E	53	A B C D E
14	A B C D E	34	A B C D E	54	A B C D E
15	A B C D E	35	A B C D E	55	A B C D E
16	A B C D E	36	A B C D E	56	A B C D E
17	A B C D E	37	A B C D E	57	A B C D E
18	A B C D E	38	A B C D E	58	A B C D E
19	A B C D E	39	A B C D E	59	A B C D E
20	A B C D E	40	A B C D E	60	A B C D E

Problem Solving

1	A B C D E
2	A B C D E
3	A B C D E
4	A B C D E
5	A B C D E
6	A B C D E
7	A B C D E
8	A B C D E
9	A B C D E
10	A B C D E
11	A B C D E
12	A B C D E
13	A B C D E
14	A B C D E
15	A B C D E
16	A B C D E
17	A B C D E
18	A B C D E
19	A B C D E
20	A B C D E

Milk Flavor

		Sample Number									
I. Defect		1	2	3	4	5	6	7	8	9	10
1 Acid											
2 Bitter											
3 Cooked											
4 Feed											
5 Flat-watery											
6 Foreign											
7 Garlic or onion											
8 Malty											
9 No defect											
10 Oxidized											
11 Rancid											
12 Salty											
II. Score		1	2	3	4	5	6	7	8	9	10
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Identification and Characteristics of Cheeses											
I. Identification		Sample Number									
		1	2	3	4	5	6	7	8	9	10
1 Blue/Bleu											
2 Brie											
3 Cheddar Mild											
4 Cheddar Sharp											
5 Colby											
6 Cream											
7 Feta											
8 Gouda/Edam											
9 Gruyere											
10 Havarti											
11 Monterey Jack											
12 Mozzarella											
13 Muenster											
14 Parmesan											
15 Processed American											
16 Provolone											
17 Queso Fresco											
18 Ricotta											
19 Swiss											
II. Characteristics		1	2	3	4	5	6	7	8	9	10
A											
B											
C											
D											
E											
F											

CMT						
I. Score		Sample Number				
		1	2	3	4	5
0						
2						
4						
6						
8						
II. Culture Result		1	2	3	4	5
Contaminated						
No Growth						
Gram negative						
Staph. species						
Staph. aureus						
Strep. species						
Strep. agalactiae						

Dairy / Non-Dairy Identification and Fat Content											
I. Identification		Sample Number									
		1	2	3	4	5	6	7	8	9	10
1 Butter											
2 Half & Half											
3 Heavy Cream (liquid)											
4 Low Fat or Reduced Fat Flavor-Added Milk											
5 Low Fat or Reduced Fat Milk											
6 Margarine											
7 Non-Dairy (milk substitute) Beverage											
8 Non-Dairy (milk substitute) Flavor-Added Beverage											
9 Non-Dairy Creamer											
10 Non-Dairy Sour Cream											
11 Non-Dairy Whipped Topping											
12 Non-Dairy Yogurt											
13 Nonfat (skim) Flavor-Added Milk											
14 Nonfat (skim) Milk											
15 Sour Cream											
16 Whipped Cream											
17 Whole Flavor-Added Milk											
18 Whole Milk											
19 Yogurt											
II. Fat Content		1	2	3	4	5	6	7	8	9	10
1 ≤0.50%											
2 1.0% - 2.0%											
3 ≥3.25%											
4 10.5%											
5 18.0%											
6 ≥36.0%											
7 80.0%											
8 Dairy Variable Fat											
9 Non-Dairy Variable Fat											