# Idaho Milk Quality Products Handbook

## *Purpose*

*To enhance learning activities relative to the quality production, processing, distribution, promotion, marketing, and consumption of dairy food products. To assist students to develop a sound perspective for utilizing decision-making.*

## Objectives

- Be able to identify cheese varieties.
- Be able to identify and evaluate the flavor quality of milk.
- Be able to distinguish between dairy and non-dairy products (imitation and substitutes).
- Be able to differentiate fat content among dairy food products.
- Be able to complete a written test on milk production and marketing.

## General Rules

1. Four participants will constitute an official team. The top three individual scores will be used in the team score tabulation.
2. Participants will be allowed a maximum of 15 minutes to score milk flavor, 15 minutes for fat content component, 15 minutes for cheese identification, 15 minutes for dairy and non-dairy products identification, and 15 minutes for the written exam.
3. All milk flavor samples are to be taken from pasteurized bulk milk for table use. Milk should be maintained at a consistent temperature throughout the event.
4. Paper cups for sampling purposes will be provided to the participants, but participants will be permitted to bring and use their own sampling containers.
5. No duplications will be present in the event for milk fat content identification and cheese identification. Duplicates will be allowed in milk defect and dairy vs non-dairy.
6. Event checkers will be used to verify official placing and scoring. Event checkers will remain at the event until their team is competing.
7. The first place team in the Milk Quality Products Event will represent Idaho in the National Milk Quality Products CDE.
8. The CDE superintendent will prepare duplicate classes to facilitate a smoother running event and ensure the freshness of the product being used.
9. A control sample of no defect milk will be made available for participants in milk sampling for calibration purposes prior to sampling milk.
10. Allergy information: food products used in this event may contain or come in contact with potential allergens. Advisors must submit a special needs request form for participants with any allergies with certification at least a week prior to the event. The event committee will make all reasonable efforts to accommodate with food allergies.

## Format and Scoring

1. Seven samples of milk to be judged on flavor (6 points each) and intensity (6 points each) subtracting 1 point per number off. Two identical sets will be used in the state CDE. Duplicates will be allowed.
2. Ten samples of cheese for identification worth 2 points each.
3. NO DUPLICATES will be allowed across samples in the milk fat section.
4. Students will identify ten dairy and non-dairy (natural/imitation) products and/or ingredient labels. Duplicate samples WILL BE ALLOWED.
5. Only whole points should be used when scoring milk flavor and intensity. Duplicate samples WILL BE ALLOWED. Check only the most serious defect in a sample even if more than one flavor or intensity is detected. If no defect is noted, check "No defect."

6. 5 samples will be provided to assess milk fat content worth 3 points each. There will be no milk fat content duplicate samples.
7. The written exam shall consist of 25 multiple choice questions worth 2 points per question. These questions will be drawn from the three previous years' National Milk Products CDE Written Tests, excluding the last National exam due to date of release.
8. Scoring - points will be deducted for incorrect answers, therefore high score wins.

## Tie Breakers

Tie breakers are to be established for teams and individuals: use milk samples as first tie breaker, and the second tie breaker is the best test score

# Awards

Awards are presented to teams as well as individuals based upon their rankings. The top 10 teams and individuals will be recognized. Individuals from 1st through 5th place will receive medals. Teams from 1st through 5th place will receive plaques.

# Acknowledgements

The United Dairymen of Idaho are sponsors of the Food Products Career Development Event through the Idaho FFA Foundation.

**List of Potential Samples for Natural Vs Imitation (Duplicates allowed)**

| 1 | Cheese slices (American) | Vs. | Artificial |
|---|---|---|---|
| 2 | Milk | Vs. | Rice, Almond, Oat, Soy Milk etc. |
| 3 | Butter | Vs. | Margarine |
| 4 | Sour Cream | Vs. | Artificial |
| 5 | Half and Half | Vs. | Non-Dairy Creamer |
| 6 | Powdered Milk | Vs. | Dry Non-Dairy Creamer |
| 7 | Whipped Cream | Vs. | Whipped Non-Dairy Topping |

**List of Potential Samples for Milk Fat Content (No duplicates allowed)**

The following components will be used in the milk fat content section. The student answers will be bubbled on the Dairy/Non Dairy Fat Content section of the scan sheet for the state event. No duplicate samples will be present.

1. Skim milk (nonfat): 0.05%-0.5%
2. Reduced fat milk: 1%-2%
3. Whole milk: 3.25%-3.5%
4. Half and half: 10.5%
5. Whipping cream: 30%

**Milk Defects Scoring Guide – Refer to current MILK DEFECTS SCORECARD (Duplicates allowed)**

Scores may range from 1 to 10. On a quality basis:

| 10 | Excellent (no defect) |
|---|---|
| 8-9 | Good |
| 5-7 | Fair |
| 2-4 | Poor |
| 1 | Unacceptable/Un-salable |

**Example: Milk Flavors**

Scores (suggested scores are given for three intensities of flavor- all numbers within the range may be used.)

| DEFECTS | Slight | Definite | Pronounced |
|---|---|---|---|
| High Acid | 3 | 2 | 1 |
| Feed | 9 | 8 | 5 |
| Flat/Watery | 9 | 8 | 7 |
| Garlic/Onion | 5 | 3 | 1 |
| Malty | 5 | 3 | 1 |
| Oxidized | 6 | 4 | 1 |
| Salty | 8 | 6 | 4 |
| Foreign | 5 | 3 | 1 |

**Example: Milk Defect positive scoring example**

Sample:
The contest milk is a Garlic and officially scored a 5.
The contestant calls it Garlic and gives it a score of 6.
The contestant would receive 6 points (defect) for calling it Garlic and 5 points for intensity (6-1=5)
Total score would be 6 + 5 = 11

The contest milk is a Garlic and officially scored a 5.
The contestant calls it Salty and gives it a score of 8.
The contestant would receive 0 points (defect) for calling it Salty and 3 points for intensity subtracting 1 pts per intensity number (6-3=3)
The score would be 0 + 3 = 3

If a student puts a 10 on their score for no defect, they will get all the 6 points for the answer plus the 6 points if they called it no defect.
**** answer is No Defect with a score of 10
**** kids calls it No Defect and they score it 10
****10 (official score) student scored it a 10 (their score) equals 6 points (they get all 6 points for being correct) plus the 6 points for getting the correct flavor, therefore they get 12 points on that sample (12 points possible for each milk)

## Procedures for Preparing Samples of the Common Off-Flavors of Fluid Milk

The Dairy Food CDE superintendent may or may not use the following procedures to prepare samples. These are simply suggestions of potential ways to prepare samples for practice and CDE's.

| | |
|---|---|
| High Acid | Add 30 – 60 mls buttermilk to 1-gallon whole milk.  Should prepare 24-48 hr ahead. |
| Bitter | Prepare a 2% aqueous solution of quinine sulfate.  Warning:  Some individuals may be allergic to quinine compounds.  Slight-Add 1.0 ml quinine solution/600 ml milk.  Definite-Add 2.0 ml quinine solution/600 ml milk.  ~ 0.2 g caffeic acid to one gallon.<br><br>Quinine is available through chemistry catalogs and can be ordered online at http://www.flinnsci.com/. |
| Feed (Alfalfa) (Molasses) | Add approx. 2-3 g of alfalfa hay to about 100 ml of fresh past./homog. milk and hold for approx. 20 min.  Then strain the milk through cheese cloth (in a funnel) into another container.  It is highly advisable to pasteurize this "stock solution" of milk by heat treating it at 70° C (158° F) for 10 min.  Next, for each 575 ml of milk: (a) Add - 20 ml of this "alfalfa" milk for -slight.  (b)  Add - 30-35 ml of this "alfalfa" milk for - definite.  Note:  Other roughages may be used to prepare feed off-flavors in a similar manner.  Pasteurize any prepared "stock solutions" of feeds in milk.<br><br>Or Add 15 ml of molasses  with 1 Quart of milk for strong result. |
| Flat | Add approx. 75-100 ml of distilled or good quality tap water to 525-500 ml of fresh past./homog. milk (slight intensity).  Add 300 – 600 ml of water to 1 gallon milk. |
| Foreign | Add 5 drops of Original Listerine per quart of milk and allow to sit overnight. |
| Garlic/onion | 3 - 6 drops onion juice or garlic powder |
| Malty | Add 15 g Grape Nuts or Grape Nuts Flakes breakfast cereal to 100 ml milk and hold for 20-30 minutes.  Strain through cheese cloth, then add 13 ml of the "stock" to 590 ml past./homog. milk (definite intensity) |
| Oxidized (metal-induced) | Prepare 100 ml of 1% $CuSO_4.5H_2O$ solution and keep refrigerated. Add the following amounts of "stock copper" solution to 600 ml. past./homog. milk:  Slight-0.75 ml 1% CuSo4; Definite-1.2 ml 1% CuSo4; Pronounced-1.8 ml 1% CuSo4; Note:  Highly advisable to prepare 24-48 hr ahead of use.  Alternatively, if pasteurized creamline (unhomogenized) milk is available, exposure of this milk to sunlight will produced the oxidized off-flavor without addition of copper ions. |
| Oxidized (light-induced) | Add 600 ml past./homog. milk to a clear glass or plastic milk container.  Expose milk to bright, direct sunlight　　　for the following exposure times:  Slight-8 to 9 minutes;  Definite-10-11 minutes;  Pronounced-12 to 15 minutes; Note:  Plan to use such prepared samples for only 1 or 2 days; the generic oxidized (metal-induced ) off-flavor may develop within 36-48 hours after light exposure. |
| Salty | Add 1-4 grams of salt to 1 gallon of milk. |

**DAIRY FOOD PRODUCTS CAREER DEVELOPMENT EVENT SCORECARDS**

*For Idaho State Career Development Events, the included scantron cards will be used unless otherwise indicated. Additional cards provided are included for study purposes and use at local and district events.*

**MILK DEFECTS SCORECARD**

Participant:_____

**Instructions**: Place the letter of the defect for each sample in the column labeled MILK DEFECT and the score for each sample next to it in the column labeled PARTICIPANT SCORE. This card is for reference only at the state event. See Scantron sheet for state scorecard directions. **Duplicates are allowed.  DO NOT write in the area labeled GRADE DIFFERENCE.**

| | Milk Sample | Milk Defect (Letter from left) | Participant Score (1-10) | Grade Difference (DO NOT write in this column) |
|---|---|---|---|---|
| A.        Feed | | | | |
| B.        Flat-Watery | | | | |
| C.        Garlic or onion | 1. | | | |
| D.        High acid | 2. | | | |
| E.        Malty | 3. | | | |
| F.        Metallic/Oxidized | 4. | | | |
| G.        Salty | 5. | | | |
| H.        Foreign | 6. | | | |
| I.        No defect | 7. | | | |
| | Totals | | | |
| Total Score (Defects + Difference) | | | | |
| **(No defect 10 points. Range 1 - 10. Milk Defects valued at 6 pts each, Intensity 6 pts subtract 1pt for each number off)** | | | | |

**MILK DEFECTS SCORECARD**

Participant:_____

**Instructions**: Place the letter of the defect for each sample in the column labeled MILK DEFECT and the score for each sample next to it in the column labeled PARTICIPANT SCORE. This card is for reference only at the state event. See Scantron sheet for state scorecard directions. **Duplicates are allowed.  DO NOT write in the area labeled GRADE DIFFERENCE**.

| | Milk Sample | Milk Defect (Letter from left) | Participant Score (1-10) | Grade Difference (DO NOT write in this column) |
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| B.        Flat-Watery | | | | |
| C.        Garlic or onion | 1. | | | |
| D.        High acid | 2. | | | |
| E.        Malty | 3. | | | |
| F.        Metallic/Oxidized | 4. | | | |
| G.        Salty | 5. | | | |
| H.        Foreign | 6. | | | |
| I.        No defect | 7. | | | |
| | Totals | | | |
| Total Score (Defects + Difference) | | | | |
| **(No defect 10 points. Range 1 - 10. Milk Defects valued at 6 pts each, Intensity 6pts  subtract 1pt for each number off)** | | | | |

**CHEESE IDENTIFICATION SCORECARD**

Participant:_____

**Instructions**: Place the letter of the CHEESE NAME for each sample in the blank for the appropriate sample number. This scorecard is for reference only at the state event. Cheese ID will be entered into the Identification and Characteristics of Cheeses section on the scan sheet.

| Cheese Names | Sample Number | Participant Identification |
|---|---|---|
| A. Blue | | |
| B. Brie | 1. | |
| C. Cheddar (mild) | 2. | |
| D. Cheddar (sharp) | 3. | |
| E. Colby | 4. | |
| F. Cream | 5. | |
| G. Gouda | 6. | |
| H. H avarti | 7. | |
| I. Monterey (Jack) | 8. | |
| J. Mozzarella | 9. | |
| K. Munster | 10. | |
| L. Processed American | (Incorrect identification 2 points. Perfect score is 20.) | |
| M. Provolone | **Score on Cheese ID** | |
| N. Swiss | | |

**CHEESE IDENTIFICATION SCORECARD**

Participant:_____

**Instructions**: Place the letter of the CHEESE NAME for each sample in the blank for the appropriate sample number. This scorecard is for reference only at the state event. Cheese ID will be entered into the Identification and Characteristics of Cheeses section on the scan sheet.

| Cheese Names | Sample Number | Participant Identification |
|---|---|---|
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| B. Brie | 1. | |
| C. Cheddar (mild) | 2. | |
| D. Cheddar (sharp) | 3. | |
| E. Colby | 4. | |
| F. Cream | 5. | |
| G. Gouda | 6. | |
| H. Havarti | 7. | |
| I. Monterey (Jack) | 8. | |
| J. Mozzarella | 9. | |
| K. Munster | 10. | |
| L. Processed American | (Incorrect identification 2 points. Perfect score is 20.) | |
| M. Provolone | **Score on Cheese ID** | |
| N. Swiss | | |

**Natural VS. Imitation PRODUCT SCORECARD**        Participant No._____

**Instructions**: <u>Circle</u> Natural or Imitation for each sample 1-10. This scorecard is for reference only at the state event. Student answers will be bubbled into the Natural/Imitation section on the scan sheet. **Duplicate samples may be present**.

| Sample Number | Sample Classification | | Score (DO NOT write in this column) |
|---|---|---|---|
| 1. | Natural | Imitation | |
| 2. | Natural | Imitation | |
| 3. | Natural | Imitation | |
| 4. | Natural | Imitation | |
| 5. | Natural | Imitation | |
| 6. | Natural | Imitation | |
| 7. | Natural | Imitation | |
| 8. | Natural | Imitation | |
| 9. | Natural | Imitation | |
| 10. | Natural | Imitation | |
| **Total Participant Score** | | | |
| Incorrect identification 2 points each. Perfect score is 20. | | | |

**Natural VS. Imitation PRODUCT SCORECARD**        Participant No._____

**Instructions**: <u>Circle</u> Natural or Imitation for each sample 1-10. This scorecard is for reference only at the state event. Student answers will be bubbled into the Natural/Imitation section on the scan sheet. **Duplicate samples may be present**.

| Sample Number | Sample Classification | | Score (DO NOT write in this column) |
|---|---|---|---|
| 1. | Natural | Imitation | |
| 2. | Natural | Imitation | |
| 3. | Natural | Imitation | |
| 4. | Natural | Imitation | |
| 5. | Natural | Imitation | |
| 6. | Natural | Imitation | |
| 7. | Natural | Imitation | |
| 8. | Natural | Imitation | |
| 9. | Natural | Imitation | |
| 10. | Natural | Imitation | |
| **Total Participant Score** | | | |
| Incorrect identification 2 points each. Perfect score is 20. | | | |

## WRITTEN EXAM SCORECARD

This scorecard is for reference only for the state event. Student answers will be bubbled into Written Exam A on the Scan sheet.

### IDAHO STATE FFA CAREER DEVELOPMENT EVENT DAIRY FOOD PRODUCTS WRITTEN EXAM

PARTICIPANT NUMBER _____

PARTICIPANT NAME _____

CLASS NUMBER _____

## PLACE AN (X) THROUGH THE CORRECT ANSWER!

| QUESTION NUMBER | | | | | |
|---|---|---|---|---|---|
| 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 |
| 21 | A | B | C | D | E |
| 22 | A | B | C | D | E |
| 23 | A | B | C | D | E |
| 24 | A | B | C | D | E |
| 25 | A | B | C | D | E |

**Two points will be deducted from the participant score for each incorrect response to the test questions.**          **TOTAL SCORE _____**

**MILK FAT COMPONENT SCORECARD**

Participant:_____ -

**Instructions**: Place the NUMBER of the MILK FAT PERCENTAGE for each sample in the blank for the appropriate sample number. Numbers represent the answers found on the scan sheet. This scorecard is for reference only at the state event. Students will bubble their fat content range answers under the Dairy/Non Dairy Fat Content section on the scan sheet. **No duplicate samples will be presented**.

| Milk Fat Component | Sample Number | Participant Identification |
|---|---|---|
| 1. Non-fat (skim) Milk: 0.05%-0.5% | 1. | |
| 2. Reduced Fat Milk: 1%-2% | 2. | |
| 3. Whole Milk: 3.25%-3.5% | 3. | |
| 4. Half and Half: 10.5% | 4. | |
| 5. Whipping Cream: 30% | 5. | |
| | **Score on Milk Fat** | |
| | | |
| (Incorrect identification 3 points each. Perfect score is 15.) | | |

**MILK FAT COMPONENT SCORECARD**

Participant:__

**Instructions**: Place the NUMBER of the MILK FAT PERCENTAGE for each sample in the blank for the appropriate sample number. Numbers represent the answers found on the scan sheet. This scorecard is for reference only at the state event. Students will bubble their fat content range answers under the Dairy/Non Dairy Fat Content section on the scan sheet. **No duplicate samples will be presented**.

| Milk Fat Component | Sample Number | Participant Identification |
|---|---|---|
| 1. Non-fat (skim) Milk: 0.05%-0.5% | 1. | |
| 2. Reduced Fat Milk: 1%-2% | 2. | |
| 3. Whole Milk: 3.25%-3.5% | 3. | |
| 4. Half and Half: 10.5% | 4. | |
| 5. Whipping Cream: 30% | 5. | |
| | **Score on Milk Fat** | |
| | | |
| (Incorrect identification 3 points each. Perfect score is 15.) | | |

# Milk Quality and Products
## Form #479-6

Incorrect Marks    Correct Mark
✓ ✗ ⊖ ·     ●

**Team Name**

This sheet is for demonstration and practice only. You must use a real scan sheet for actual competition.

**Team #**

**Last Name**

**First Name**

**Code**

### Written Exam A / Milk Production

| | | | | | |
|---|---|---|---|---|---|
| 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 |
| 21 | A | B | C | D | E |
| 22 | A | B | C | D | E |
| 23 | A | B | C | D | E |
| 24 | A | B | C | D | E |
| 25 | A | B | C | D | E |
| 26 | A | B | C | D | E |
| 27 | A | B | C | D | E |
| 28 | A | B | C | D | E |
| 29 | A | B | C | D | E |
| 30 | A | B | C | D | E |

### Written Exam B / Milk Marketing

| | | | | | |
|---|---|---|---|---|---|
| 31 | A | B | C | D | E |
| 32 | A | B | C | D | E |
| 33 | A | B | C | D | E |
| 34 | A | B | C | D | E |
| 35 | A | B | C | D | E |
| 36 | A | B | C | D | E |
| 37 | A | B | C | D | E |
| 38 | A | B | C | D | E |
| 39 | A | B | C | D | E |
| 40 | A | B | C | D | E |
| 41 | A | B | C | D | E |
| 42 | A | B | C | D | E |
| 43 | A | B | C | D | E |
| 44 | A | B | C | D | E |
| 45 | A | B | C | D | E |
| 46 | A | B | C | D | E |
| 47 | A | B | C | D | E |
| 48 | A | B | C | D | E |
| 49 | A | B | C | D | E |
| 50 | A | B | C | D | E |
| 51 | A | B | C | D | E |
| 52 | A | B | C | D | E |
| 53 | A | B | C | D | E |
| 54 | A | B | C | D | E |
| 55 | A | B | C | D | E |
| 56 | A | B | C | D | E |
| 57 | A | B | C | D | E |
| 58 | A | B | C | D | E |
| 59 | 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 |

### Dairy / Non-Dairy Identification and Fat Content

**I. Identification** — Sample Number

| I. Identification | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 Butter | | | | | | | | | | |
| 2 Flavored Milk | | | | | | | | | | |
| 3 Half and Half | | | | | | | | | | |
| 4 Heavy Cream | | | | | | | | | | |
| 5 Light Whipped Cream | | | | | | | | | | |
| 6 Milk | | | | | | | | | | |
| 7 Sour Cream | | | | | | | | | | |
| 8 Margarine | | | | | | | | | | |
| 9 Non Dairy Creamer | | | | | | | | | | |
| 10 Non Dairy Flavored Beverage | | | | | | | | | | |
| 11 Non Dairy Milk | | | | | | | | | | |
| 12 Non Dairy Sour Cream | | | | | | | | | | |
| 13 Non Dairy Whipped Topping | | | | | | | | | | |

**II. Fat Content**

| II. Fat Content | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 0.05% - 0.5% | | | | | | | | | | |
| 2 1% - 2% | | | | | | | | | | |
| 3 3.25% - 3.5% | | | | | | | | | | |
| 4 10.5% | | | | | | | | | | |
| 5 18% | | | | | | | | | | |
| 6 30% | | | | | | | | | | |
| 7 36% | | | | | | | | | | |
| 8 80% | | | | | | | | | | |
| 9 Non Dairy Variable Fat | | | | | | | | | | |

## Idal'lllncatbl ■nd QlaraclarllH:11 DI ChillHH

| 11 Weelk:wt rin | Sample Number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 lllllrilBlllll | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Brie | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Cheddar Mild | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Cheddar Sharp | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 Cream/Neufchatel | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 Edam/Gouda | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 Monterey Jack | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 Mozzarella | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 Processed American | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 Provolone | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 Swiss | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 Colby | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 Feta | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 Havarti | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 15 Gruyere | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 16 Muenster | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 17 Parmesan | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 18 Queso Fresco | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 19 Ricotta | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| all ntalXl | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ll_·__ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| El! | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| D | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| F | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

### CMT

| Score | Sample Number | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 0 | ○ | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | ○ |
| 4 | ○ | ○ | ○ | ○ | ○ |
| 6 | ○ | ○ | ○ | ○ | ○ |
| 8 | ○ | ○ | ○ | ○ | ○ |

*Mark one answer in each column!*

### Natural / Imitation

| Food Identification | Sample Number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 Natural | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Imitation | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

*Mark one answer in each column!*

### Milk Flavor

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

| II. Score | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

## Milk Quality and Products
### Form #479-6

Incorrect Marks   Correct Mark
✓ ✗ ⊖ •     ●

**Team Name**

This sheet is for demonstration and practice only. You must use a real scan sheet for actual competition.

**Team #**

**Last Name**

**First Name**

**Code**

### Written Exam A / Milk Production

| # | A | B | C | D | E |
|---|---|---|---|---|---|
| 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 |
| 21 | A | B | C | D | E |
| 22 | A | B | C | D | E |
| 23 | A | B | C | D | E |
| 24 | A | B | C | D | E |
| 25 | A | B | C | D | E |
| 26 | A | B | C | D | E |
| 27 | A | B | C | D | E |
| 28 | A | B | C | D | E |
| 29 | A | B | C | D | E |
| 30 | A | B | C | D | E |

**EXAM 25**

### Written Exam B / Milk Marketing

| # | A | B | C | D | E |
|---|---|---|---|---|---|
| 31 | A | B | C | D | E |
| 32 | A | B | C | D | E |
| 33 | A | B | C | D | E |
| 34 | A | B | C | D | E |
| 35 | A | B | C | D | E |
| 36 | A | B | C | D | E |
| 37 | A | B | C | D | E |
| 38 | A | B | C | D | E |
| 39 | A | B | C | D | E |
| 40 | A | B | C | D | E |
| 41 | A | B | C | D | E |
| 42 | A | B | C | D | E |
| 43 | A | B | C | D | E |
| 44 | A | B | C | D | E |
| 45 | A | B | C | D | E |
| 46 | A | B | C | D | E |
| 47 | A | B | C | D | E |
| 48 | A | B | C | D | E |
| 49 | A | B | C | D | E |
| 50 | A | B | C | D | E |
| 51 | A | B | C | D | E |
| 52 | A | B | C | D | E |
| 53 | A | B | C | D | E |
| 54 | A | B | C | D | E |
| 55 | A | B | C | D | E |
| 56 | A | B | C | D | E |
| 57 | A | B | C | D | E |
| 58 | A | B | C | D | E |
| 59 | A | B | C | D | E |
| 60 | A | B | C | D | E |

### Problem Solving

| # | A | B | C | D | E |
|---|---|---|---|---|---|
| 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 |

### Dairy / Non-Dairy Identification and Fat Content

**I. Identification** — Sample Number

| I. Identification | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 Butter | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Flavored Milk | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Half and Half | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Heavy Cream | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 Light Whipped Cream | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 Milk | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 Sour Cream | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 Margarine | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 Non Dairy Creamer | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 Non Dairy Flavored Beverage | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 Non Dairy Milk | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 Non Dairy Sour Cream | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 Non Dairy Whipped Topping | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| II. Fat Content | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 0.05% - 0.5% | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 1% - 2% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 3 3.25% - 3.5% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 4 10.5% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 5 18% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 6 30% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 7 36% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 8 80% | | | | | | ○ | ○ | ○ | ○ | ○ |
| 9 Non Dairy Variable Fat | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**MILK FAT 5**

## 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 Cream/Neufchatel | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 Edam/Gouda | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 Monterey Jack | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 Mozzarella | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 Processed American | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 Provolone | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 Swiss | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 Colby | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 Feta | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 Havarti | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 15 Gruyere | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 16 Muenster | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 17 Parmesan | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 18 Queso Fresco | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 19 Ricotta | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 20 Romano | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| II. Characteristics | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| B | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| D | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| F | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

CHEESE ID
10

## CMT

| Score | Sample Number | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 0 | ○ | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | ○ |
| 4 | ○ | ○ | ○ | ○ | ○ |
| 6 | ○ | ○ | ○ | ○ | ○ |
| 8 | ○ | ○ | ○ | ○ | ○ |

Mark one answer in each column

## Natural / Imitation

| Food Identification | Sample Number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 Natural | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Imitation | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Mark one answer in each column

Natural/Imitation
10

## Milk Flavor

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

MILK DEFECT
7

| II. Score | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 4 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 5 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 6 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 7 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 8 | ○ | | | | | ○ | ○ | ○ | ○ | ○ |
| 9 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

MILK DEFECT
SEVERITY
7