



**OREGON
DEPARTMENT OF
AGRICULTURE**

**FOOD SAFETY PROGRAM
Bulk Milk Hauler
Study Manual**

TABLE OF CONTENTS

I.	PURPOSE	3
II.	DEFINITIONS	3
III.	INTRODUCTION	3
IV.	LICENSING	4
V.	APPEARANCE	4
VI.	CHECKLIST PRIOR TO STARTING YOUR ROUTE	5
VII.	PROCEDURE FOR GRADING, MEASURING, SAMPLING, AND HAULING MILK	7
	A. PREPARATION	7
	B. ODOR OF THE MILK	7
	C. MILK APPEARANCE	9
	D. MEASURING THE MILK	9
	E. FACTORS AFFECTING BULK TANK MEASUREMENTS	10
VIII.	CORRECT AGITATION TIME	11
IX.	TEMPERATURE	11
X.	RECORDING RESULTS	13
XI.	SAMPLING OF MILK	14
XII.	TEMPERATURE CONTROL	15
XIII.	SAMPLING AND GRADING MILK IN TANKS WITHOUT TOP ACCESS	15
XIV.	SAMPLING MILK USING SAMPLING COCKS OR IN-LINE ASEPTIC SAMPLE PORTS	15
XV.	CONNECTION OF THE HOSE	15
XVI.	PUMPING THE MILK	16
XVII.	FINAL FARM CHECK	16
XVIII.	CLEANING DAIRY EQUIPMENT	16
XIX.	OREGON STANDARDS FOR GRADE A RAW MILK	17
XX.	AVAILABLE TRAINING VIDEO	21

I. PURPOSE

This manual provides the bulk milk hauler with the procedures and techniques needed for sampling and hauling milk in a sanitary and accurate manner. It also serves as a refresher course for experienced haulers. Correct procedures and techniques must be used to maintain the milk quality from farm to plant. Milk value is based on quality, volume, protein and butterfat content of milk. Poor sampling and measuring techniques lead to an incorrect dollar value placed on the farm's bulk milk. The hauler will, after studying this manual, be able to accurately measure, grade, sample and haul milk to ensure that milk is handled and transported under sanitary conditions and that the true value of milk is maintained.

II. DEFINITIONS

"Sampler-Grader" is a person responsible for the grading of milk received by a milk distributor or dairy products plant, and collecting regulatory samples of raw for pasteurization milk being received.

"Milk" means the lacteal secretion of cows, sheep and goats.

"Milk Hauler" means a person who, in the course of employment, accepts bulk fluid milk and transports that commodity to a dairy products plant or a physical facility of a distributor or producer-distributor.

"Mobile milk tanker" means a tank or other receptacle that attaches to a bulk tank truck or other equipment and is used to transport fluid milk, milk or milk products.

"Producer" means a person who engages in the production of unpasteurized milk on a dairy farm and does not bottle the milk on the premises where production occurs, in pasteurized or unpasteurized form and for human consumption.

III. INTRODUCTION

The quality of milk delivered to the plant depends on the hauler identifying and eliminating unsatisfactory milk and handling the milk in a sanitary manner. "Sampler-Grader" is a person responsible for the grading of milk received by a milk distributor or dairy products plant, and collecting regulatory samples of raw for pasteurization milk being received. OAR 603-024-0019 (6)(a). A license will be issued when the hauler demonstrates the correct techniques and procedures for sampling and hauling milk. The hauler must accurately measure the amount of milk in the bulk tank, notice any spoilage or contaminants in the milk, measure the temperature, collect the official sample for laboratory analysis plus pump and haul the milk so quality is maintained. Samples must be taken under sanitary conditions so that the quality and composition tested can accurately represent the contents of the farm bulk tank. The true value of the farm's bulk milk rests on the hauler strictly adhering to the correct techniques and procedures outlined in this manual.

IV. LICENSING

The grading, sampling, measuring and pumping of milk from a farm bulk tank and the delivery of the milk to a dairy plant, receiving station, or transfer station shall only be done by a licensed milk hauler. A milk hauler means a person who, in the course of employment, accepts bulk fluid milk and transports that commodity to a dairy products plant or a physical facility of a distributor or producer-distributor. ORS 621.003 (15). All relief or part-time haulers must hold a current license. A sampler-grader is a person responsible for the grading of milk received by a milk distributor or dairy products plant, and collecting regulatory samples of raw for pasteurization milk being received. OAR 603-024-0019(6)(a).

All prospective haulers must immediately apply for a **sampler/grader license**. Applicants for dairy operators' licenses **shall** be: able to **read and write legibly**; at least **18 years of age**; **free of communicable diseases**. OAR 603-024-0490 (1).

Each milk hauler who grades fluid milk as fit or unfit for processing as fluid milk due to quality, odor, flavor or wholesomeness must first obtain a license from the department authorizing that person to sample and grade fluid milk. Each applicant for a milk sampler's and grader's license shall, by written examination, demonstrate an adequate knowledge of milk sanitation as it relates to the sampling, grading and handling of fluid milk and cream for analysis. The department shall give examinations for licenses at such times and places as appears to be necessary and practicable. ORS 621.072 (4)

Each license issued under this section expires on June 30 following the date of its issuance unless sooner revoked and may be renewed upon application of the licensee. Each application for a license or annual renewal shall be accompanied by a license fee. ORS 621.072 (6). A practical evaluation must be taken by all haulers every two years to maintain their license. Proof of a current license needs to be made available upon request. The license is property of the milk/sampler grader.

V. APPEARANCE

A. Bulk Milk Hauler

The bulk milk hauler is a handler of human food and the hauler's appearance and habits should reflect this job. A clean, neat appearance and good personal habits create an image vital to the dairy industry and establishes confidence in the ability of the hauler to do the job. The hauler must refrain from smoking or chewing tobacco while handling equipment and milk. Hands must be washed with soap and dried with a single service towel prior to taking bulk milk samples and at other times when needed.

B. Bulk Milk Tank Truck

The clean appearance of the bulk milk truck and cab also establishes confidence in the hauler's ability to handle a food product. The bulk tanks and all appurtenances shall meet the design

and construction requirements of the Pasteurized Milk Ordinance (PMO). Where flexibility is required, the fluid transfer system shall be free draining and so supported to maintain uniform slope and alignment. All hoses, pumps, caps and fittings must be in good repair and free of leaks. All valves and milk line junctions must be protected from dust and contamination. Filters must be properly installed on air vents for tanks. The hauler is responsible for notifying the maintenance department if any of these items are defective. It is the responsibility of the milk tank truck owner or operator to ensure the proper and legible identification of the milk tank trucks in their possession.

VI. CHECKLIST PRIOR TO STARTING YOUR ROUTE

The hauler must have certain supplies and equipment in order to perform satisfactorily the requirements of measuring, sampling, pumping and transporting the milk. Before starting out, check for the following:

- A. The bulk tank truck and the fluid transfer equipment have been properly washed and sanitized. The milk tank truck and all of its appurtenances shall be cleaned and sanitized prior to first use. It is allowable to pick up multiple loads continuously within a 24-hour period after first use, and be at the last farm prior to hour 24, provided that the milk tank truck is washed after each day used. When the time elapsed after cleaning and sanitizing before first use exceeds 96 hours, the tank must be re-sanitized. The responsibility normally lies with a plant employee; however, it is the bulk hauler's responsibility to check the tank and transfer equipment prior to leaving the plant or yard.
- B. The most recent wash tag must be attached, and contain the following information:
 - 1. The location the tank was cleaned and sanitized
 - 2. Identification of the Milk Tank Truck
 - 3. The date and time
 - 4. The signature or initials of the employee who washed and sanitized the tank.
 - 5. The date and time of first usage if multiple loads are expected to approach 24-hours of continuous use before the bulk milk tank is to be washed.
- C. The cab must be kept clean and tidy. The outside of the milk tank truck should be kept clean with consideration for existing weather conditions.
- D. The following sampling equipment must be present on the truck:
 - 1. An adequate supply of sample containers, stored in a clean dust-proof container. Use only sterile containers with leak-proof lids.

2. A stainless-steel sample transfer instrument (dipper) with long handles silver soldered to the bowl and container; both must be in good repair. The container must be capped to protect instrument and sanitizer from contamination.
 3. A sanitizing solution of 200 ppm chlorine or its equivalent. Test strips should be used to avoid over- or under-strength solutions. Improper rinsing of the dipper will cause the sanitizer to lose strength. Chlorine strength should be checked after each third stop or whenever the solution appears discolored or milky.
 4. Insulated sample carrying case with a dust-tight cover.
 5. Cracked ice or other refrigerant to maintain sample temperature at 32-40°F, Provide a method, such as the use of racks or drainage holes in the sample case, to keep the sample free from contamination due to melting ice.
 6. A waterproof, indelible marker to identify samples.
- E. Non-breakable calibrated pocket thermometer with graduation intervals not exceeding 2°F. An approved type, (metal stem or digital thermometer) with a range of 25 - 125°F is recommended. Check accuracy at least once **every six (6) months** against a thermometer certified by NIST (accuracy must be $\pm 2^\circ\text{F}$). A NIST traceable thermometer can be used to calibrate hauler/sampler stem thermometers. The **date** the thermometer was checked and the **initials** of the individual who checked it **must be** recorded by one of the following methods:
- Attach to the thermometer
 - Attach to the thermometer case; or
 - Provide accompanying paperwork.

Note: To calibrate a metal stem probe thermometer, place the thermometer stem 2-4 inches in a mixture of 3 parts ice, 1 part water; agitate the thermometer stem in the ice water. When the dial comes to rest, it should register 32°F. If it does not read 32°F, adjust the calibration screw until it reads 32°F, then calibrate again.

- F. Single service paper towels.
- G. Watch or other timing device (to monitor tank agitation time)
- H. Adequate supply of milk weight tickets and a pen.

VII. PROCEDURE FOR GRADING, MEASURING, SAMPLING, AND HAULING MILK

The following are the procedures to be followed by the bulk milk hauler. Milk is to be examined on the farm by sight and smell for any off odor or other abnormality. If there is more than one bulk tank located on a farm, each tank must be separately sampled, measured and checked for odor and appearance. The milk house doors must always be closed when picking up milk. The frequency of pick up from each Grade A farm must not be longer than 72 hours.

A. PREPARATION

Hauler/samplers should thoroughly examine their truck, equipment and supplies at the beginning of each day. The following are required in order to perform proper sampling and weighing procedures:

1. Verify that the tanker is clean and sanitized, and that the current wash tag is present. Prior to delivering the milk to a processing facility, check tank seals to be sure that none are broken.
2. Review the equipment checklist.
3. Upon arrival at the farm, transfer milk sampling equipment from the truck to the milk house; Turn on lights.
4. Bring the transfer hose into the milk house **through the hose port**. Remove the cap from the bulk tank outlet valve. Sanitize the valve if it is open, leaking, or if foreign matter is present.
5. Remove the cap from the transfer hose, while preventing contamination of the hose cap, and connect the hose to the tank outlet.
6. **Wash hands properly** before grading the milk.

B. ODOR OF THE MILK

The most important factor in consumer acceptance of dairy products is flavor. Milk flavor control begins at the farm. The hauler can recognize an off-flavor usually by the presence of an off-odor. Normal milk has virtually no odor. The hauler should have a firm impression as to what constitutes normal milk in order to detect with confidence off-odors in milk. If the milk has a serious off-odor, the plant field person should be contacted immediately to determine if the milk should be rejected. In case a hauler is uncertain as to whether a tank has an off-odor, contact the plant for guidance, and obtain a sample for the plant on which a final decision may be made. Any change in quality should be immediately brought to the attention of the producer and the milk plant by making an appropriate comment on the producer's milk weight ticket. This warning may often be the earliest indication of the start of a problem. Some of the more common off-odors and their possible causes:

1. FEED - The feed a cow eats may impart certain odors to milk. Some stronger feeds will carry through more noticeably than others. Odors resembling green grass, silage, turnips, and alfalfa hay are outstanding examples. Feed odor can be minimized, or eliminated by taking the cows off offending feeds at least four hours before milking. Certain feeds can be detected in milk if fed to the cow even 15 to 30 minutes before milking
2. BARNY - This odor is caused by cows breathing in foul air due to poor barn sanitation and/or ventilation. Proper ventilation, good sanitation, and proper milking procedures will correct this problem.
3. FOREIGN - Any serious objectionable odor foreign to milk, such as sanitizer, fly spray, paint, oil, kerosene, creosote, or a medicinal substance, will render the milk unacceptable or unfit for use. Such an odor may be caused by direct contamination of the milk or may be absorbed from the air. Sanitizers are included in this category because the residue of sanitizer, such as hypochlorite and iodophor, if left on dairy equipment, may be absorbed by milk and impart a foreign odor. Phenolic compounds used in udder ointments may combine with iodophor or hypochlorite sanitizers to form a highly objectionable foreign odor that is detectable in very low concentrations.
4. GARLIC/ONION - This obnoxious weed flavor, imparted to milk when the cow eats garlic, onions, or leeks, is not classified as one of the usual feed flavors described above. The garlic/onion flavor is recognized by distinctive odor suggestive of its name. It may actually be so objectionable as to render the milk undesirable for use.
5. MUSTY - This odor is suggestive of musty or moldy hay. It may be absorbed directly by the milk, but is more likely to come from feed or stagnant water consumed by the cow.
6. RANCID - Oxidative Rancidity: Oxidized milk gives off odors usually described as cardboard-like, metallic, or tallow-like. It is usually more noticeable during the winter months when cows are on dry feed. The most frequent cause of oxidative rancidity is the contamination of milk with small amount of copper or iron from milk contact surfaces. Hydrolytic Rancidity - Hydrolytic rancidity found in milk will give off odor resembling spoiled nutmeats. It is more noticeable during winter, when cows are on dry feed, or during late lactation. Agitation of warm raw milk in the presence of air, causing foaming, will result in a rancid type odor within a few hours.

7. SOUR - Sour milk will have a malty odor and will be found when bacteria grow in poorly cooled milk. It also may result from bacterial growth due to insanitary milking practices and/or insanitary equipment.
8. WEEDY - The weedy odor is not included among the usual feed odors. It may include obnoxious odors resembling such plants as ragweed, bitterweed, or peppergrass, and may become a very troublesome flavor defect. It can be eliminated or minimized by keeping cows away from weed infested pastures or by not offering feeds containing such weeds until after the cow is milked.

C. MILK APPEARANCE

Normal milk color ranges from bluish white to golden yellow and is free from all foreign or clotted matter. When you are checking the appearance of a milk sample, make sure the milk house light is on or the area is well lighted. Lift the lid and observe the complete, undisturbed milk surface. Evidence of partially churned milkfat, frozen milk, or other conditions that may alter the reliability of your sample, is reason for not taking the sample. Milk may not be collected unless a sample has been taken. Note any problems on the weight ticket.

Milk may be rejected when it contains foreign material or no longer has the texture of normal liquid milk. If there is evidence of any of the following, the hauler must contact the plant field person to determine if this is reason to reject the milk:

1. BLOODY MILK - The milk from mastitic cows may contain blood. A small amount of bloody milk can give a large quantity of normal milk a reddish tinge. Blood clots in milk can indicate that a cow with a damaged teat was milked.
2. FLAKY MILK - Milk from cows having mastitis may show light flakiness or pronounced stringy curd particles.
3. EXTRANEIOUS MATTER - Floating extraneous matter includes such things as insects, hair, chaff, and straw.
4. FROZEN OR PARTIALLY CHURNED MILKFAT - These problems, depending on their severity, may or may not be reasons for rejecting the milk.

D. MEASURING THE MILK

The milk must be completely motionless when measurements are made. The agitator switch must be turned to off, to make sure the agitator doesn't start while you are measuring. If the agitator is running when you arrive, it may be easier for you to sample before shutting off the agitator.

1. **MEASURING STICK:** The essential steps to ensure an accurate measurement are:
 - Prior to measuring, the measuring stick must be clean, dry, and free of fat. Use a clean, dry, single service paper towel to dry the measuring stick. With long measuring sticks, it is acceptable to dry only the gauging sections.
 - If there is any foam, gently move the foam away from the measurement area with the end of the measuring stick. Then lower it slowly into the milk until it reaches a point approximately one quarter inch from its proper position. Wait a few seconds, and then gently lower the rod until it seats itself naturally.
 - Remove the stick and read at once. The markings should be read at eye level. Each graduation is equivalent to a determined number of pounds of milk posted on a conversion chart specifically calibrated for each tank. The serial number of the bulk tank, measuring stick, and conversion chart must be the same.
 - Read the milk line to the closest graduation mark. If the milk line falls half way between marks, always read to the nearest even number.
 - Repeat the above procedure until two identical measurements are taken. Immediately record the volume on the weight ticket. Store the measuring stick in the bulk tank in its proper position between readings.

2. **EXTERNAL SIGHT TUBES:** The procedures for accurately measuring milk volume in a milk tank with external gauges are:
 - Check sight tube hoses (top and bottom) and clear them of water, milk, kinks or other obstructions.
 - Slowly allow milk to enter the sight tube, this will minimize foam formation. Open the tank valve partially until the milk has stabilized in the tube. Once the milk has stabilized, fully open the valve.
 - Align the gauge slide with the top of the milk in the sight tube.
 - Read the gauge to the closest graduation mark. When the milk line falls exactly between two marks read to the nearest even number.
 - Record the reading on the weight ticket then discard the milk in the sight tube. Close the tank valve before discarding sight tube milk.

E. FACTORS AFFECTING BULK TANK MEASUREMENTS

The farm bulk tank and its calibration are the responsibility of the producer under the supervision of the plant and state Department of Agriculture. However, there are conditions that the hauler should be aware of that could contribute to inaccurate weight problems.

1. The tank is incorrectly calibrated
2. Errors in the weight conversion chart
3. Bulk tank is out of level

4. Heaving, cracking, or settling of milk house floor causing the bulk tank to shift
5. Improper footings under the tank legs
6. A weaving distortion of the measuring stick, bracket, or seat
7. Measuring rod gauge points don't line up properly

If you notice any discrepancies contact the producer, field person, or ODA Food Safety inspector.

VIII. CORRECT AGITATION TIME

Proper agitation is essential in obtaining a sample that is representative of the milk in the tank. With inadequate agitation, samples taken from the top of the tank contain more bacteria, somatic cells, and milkfat than samples taken low in the tank. As a general rule, agitate for five minutes. For tanks of 1,000 gallons or larger, agitate for ten minutes. If the agitator is running when you arrive, start the timing at that time.

IX. TEMPERATURE

The temperature of the milk must be measured at each pickup. The recommended thermometer should have a stainless-steel stem, an unbreakable plastic window, an external adjustment for calibration and an accuracy of + or - 2 degrees F. Glass mercury thermometers are not recommended because of the danger of breaking during use.

The accuracy of the thermometer should be calibrated initially and at least every six months thereafter against a thermometer certified by the National Institute of Standards (NIST) with the results and date recorded on the carrying case. Thermometers must be checked in a 32-40°F liquid. Each thermometer case must be tagged with the correction factor and the date last checked. A record of these calibrations must be maintained at the laboratory.

The thermometer stem must be sanitized in 200 ppm chlorine or its equivalent for one minute before checking the temperature of the milk. Sanitizing of the thermometer is necessary prior to each use.

The temperature-recording device shall be operated continuously and be maintained in a properly functioning manner. Circular charts shall not overlap. Temperature-recording records shall properly identify the producer, date installed, tank or silo identification, if more than one, and signature or initials of the person installing the record. PMO Item 18r.

Raw milk for pasteurization shall be cooled to 50°F or less within four hours or less, of the commencement of the first milking, and to 45°F or less, within two hours after the completion of milking. Provided, that the blend temperature after the first milking and subsequent milking does not exceed 50°F. PMO Item 18r.

The milk sampler grader must read and record the temperature of the milk at each farm. Milk in excess of 45°F (7.2°C) shall be rejected unless milk is collected within two hours after milking, then the blend temperature may not exceed 50°F (10°C). Temperatures above 50°F in the tank may be an indication that the bulk tank is not cooling properly. Each milk sampler grader must have an accurate thermometer (checked every 6 months) so that he or she can periodically check the accuracy of the bulk tank thermometer. The milk sampler grader shall check the bulk tank thermometer at least once each month against his pocket thermometer and maintain a record in the milkhous.

If milk is stored beyond the legal limit, the hauler must contact the field person to determine if the milk is of acceptable quality before the milk can be picked up. Temperature measurements provide useful quality control information for both the producer and the receiving plant. If the temperature readings gradually increase, it will show the hauler that the tank is not cooling properly. Contact the producer and field person so the problem can be fixed.

NOTES:

1. **Do not contaminate the milk** during measurement. Do not re-use the single service towel, or carry towels in pocket, and make sure hands have been washed.
2. Towels used for washing cow udders frequently are impregnated with chemicals. **Do not use them to dry measurement sticks.**
3. If a milk measurement is exactly one halfway between the marks on the measurement stick, read it to the **nearest even number**. If it is not exactly halfway between the marks, then it can be read to the **nearest number**.
4. **Multiple tanks:** If there is more than one farm bulk milk tank located on a dairy farm, each tank must be **separately sampled, measured, and checked for odor and appearance**.
5. If the measuring stick for the farm bulk milk tank is stored **outside the milk tank, it must be sanitized** and completely dry prior to measuring.
6. **Vernier:** Some tanks have a measuring tube on the outside of the milk tank. A slide, called a vernier, is used to determine the measurement of the milk. Slide the vernier to the center of the meniscus (the highest point of the milk, in the center of the tube), read the line on the scale plate that corresponds with the measuring point. If the measuring point is between lines, use the line closest to the measuring point. If the measuring point is exactly halfway between two lines, use the nearest even-numbered line.
7. The hauler/sampler must verify that the serial number on the measuring stick, the farm bulk milk tank, and the conversion chart are the same.

Universal Sampling Procedures:

For the industry standards to be upheld, the procedures used to collect raw milk samples at the farm must be done the same way each time. The use of the “universal sampling procedures” allows for more validity and faith in the sample results collected by industry personnel. The following milk sampling procedures must be strictly followed:

- **Agitate the milk:** Proper agitation time cannot be overemphasized. Adequate agitation time is needed for accurate butterfat and milk quality sample results.

Current Standard Methods requires 10 minutes of agitation time for tanks sized greater than 1000 gallons, unless otherwise specified by the tank manufacturer.

X. RECORDING RESULTS

To avoid error, promptly record all results. The following results must be included on the farm milk weight ticket:

1. Producer name and number
2. Date of collection, to include: day, month, year (if not on farm sheet)
3. Measuring stick reading
4. Milk weight
5. Milk temperature
6. Time of pickup
7. Hauler’s name and license or permit number
8. Milk quality – odor, appearance
9. Name of buyer must be on farm sheet

The route load sheet must contain the following information:

1. Route number
2. Hauler’s signature
3. Date
4. Producer number
5. Stick reading and milk weight
6. Time of pick up
7. Milk quality – odor appearance
8. BTU number
9. Temperature

XI. SAMPLING OF MILK

Sampling of a farm bulk milk tank is an important part of a hauler's responsibility. The sample must be representative and taken in a manner to prevent contamination of the sample. Samples collected by the hauler are referred to as "Universal Samples" and the "Universal Sampling System". This means that all tests and examinations may be conducted on any sample collected. These samples are used as the official samples for the producer to determine grade and therefore the price of the milk. Samples are to be collected every time milk is picked up at the farm.

This sampling procedure should be strictly followed:

1. Wash hands with soap and dry with a single service towel
2. Mark each sample container with the shipper name and address, and permit number
3. Agitate milk for the required time (see section VIII)
4. The sampling dipper must be clean and properly sanitized in a 200ppm chlorine solution or its equivalent prior to sampling milk. The dipper must be in contact with the sanitizing solution for at least one minute prior to use. The dipper should remain in the sanitizing solution until it is removed to sample the milk
5. If the dipper is stored and maintained at the farm, make sure it is clean and properly sanitized before sampling the milk
6. Do not carry containers in pockets of clothing
7. Open the sample container, being careful not to contaminate the interior of the container and lid. Contamination of the sample container will alter the laboratory results and possibly reduce the producer's payment. If the container becomes contaminated discard it and use another. Do not dip the container in the milk.
8. Drain sanitizer out of the dipper and rinse it twice in the milk before taking the sample, being careful not to put your hands into the milk. Extend the dipper six to eight inches into the milk.
9. Sample the milk over the tank to the side away from the exposed milk opening. The container should not be filled more than three-quarters full. This will enable the laboratory to properly mix the sample before testing.
10. Close the sample container, making sure it is tightly closed to prevent contamination and does not leak.
11. Immediately place the sample in the refrigerated sample case, keeping samples at 32°F - 40°F. Do not freeze samples. Maintain the cooling medium at a level slightly above the milk level in the containers. Do not submerge the lid of the container under the cooling medium. Do not rely on winter air temperatures to keep samples cold.
12. After you have sampled the milk, rinse the dipper with tap water and return it to the sanitizing solution

13. For farms with more than one tank, sample each tank separately and label samples so each tank can be identified.

XII. TEMPERATURE CONTROL

Always take a second sample for temperature control (TC) at the first stop for each tanker load. Mark the container with "temperature control" or "TC", date, time, temperature, producer number, and hauler identification. Check and record the temperature of this sample when the samples are delivered to the plant or laboratory. This temperature will indicate to the hauler whether samples were stored with adequate ice or refrigerant.

XIII. SAMPLING AND GRADING MILK IN TANKS WITHOUT TOP ACCESS

Milk from large farm tanks (silo and horizontal types) without top lids or manholes cannot be sampled and graded in the conventional manner.

A. CHECKING FOR ODOR

- Agitate milk for required time
- Using the sample valve, fill a clean sample container three-quarters full
- Close the sample container and let it sit for several minutes
- While slowly opening the sample container check for odor. If there is some doubt repeat the process, warming the milk before checking the odor

XIV. SAMPLING MILK USING SAMPLING COCKS OR IN-LINE ASEPTIC SAMPLE PORTS

1. Agitate milk for the required time
2. Sanitize the sample valve or the ported in-line aseptic sampling membrane with a 200 ppm chlorine solution for a minimum of one minute. This can be accomplished by using a squeeze bottle or "whirl-pak" bag full of chlorine solution.
3. Run several ounces of milk through the sample valve to remove the sanitizer. Discard this milk.
4. If using a ported aseptic sampling membrane, a new port within the membrane will be used each time with a new sterile needle.
5. Draw off a milk sample into the container, filling the container only three-quarters full

XV. CONNECTION OF THE HOSE

The transfer hose must be brought into the milk room through the hose port. After starting the tanker pump, remove the cap from the tank valve and the cap from the transfer hose and connect the hose to the bulk tank outlet. Be careful not to place the product contact surface for the hose cap on a dirty surface. The bulk tank outlet valve need only be sanitized under certain circumstances such as: (1) a

leaking valve; (2) a dirty valve cap; (3) when other types of contamination are evident; (4) when the outlet valve is not protected. The transfer hose must be capped at all times, except during loading, unloading or cleaning. If there is evidence of the bulk tank valve leaking, notify the producer and field person.

XVI. PUMPING THE MILK

After measuring and sampling the milk, close the lid. To aid in the removal of butterfat that may have clung to the side of the tank and to help protect the plant against fat loss due to this factor, leave the agitator running until the tank is at least half empty. Make sure the agitator is shut off before foaming or splashing begins to prevent product loss due to foam.

When the tank is empty, shut off the pump as soon as possible to avoid sucking air and possible milk house odors into the tanker milk. Then switch off the refrigeration compressor on a direct expansion tank or the water circulation pump on an ice bank tank. Remove the hose and cap immediately. Visually check the bottom of the bulk tank for sediment. If it is excessive, make note of it on the load sheet and notify the producer and field person.

After pump out, open the outlet valve and thoroughly rinse the interior of the bulk tank with warm water (about 110F) unless directed otherwise by the dairy farmer. This will make it easier for the producer to clean up. Close the tank lid to prevent the inside from drying out and to keep out any foreign material. Rinse off milk spillage on the floor as this will sour and develop acid which will eventually erode the concrete.

XVII. FINAL FARM CHECK

Before you leave the milk house, make note of any abnormalities to report to the producer and field person. Note any conditions within the milk house that may cause contamination of the milk or cause results to be incorrect. Before you leave, make sure the milk room is in as good or better shape than when you arrived. Rinse the floor, hang up the hose, turn out the lights, and close the hose port.

XVIII. CLEANING DAIRY EQUIPMENT

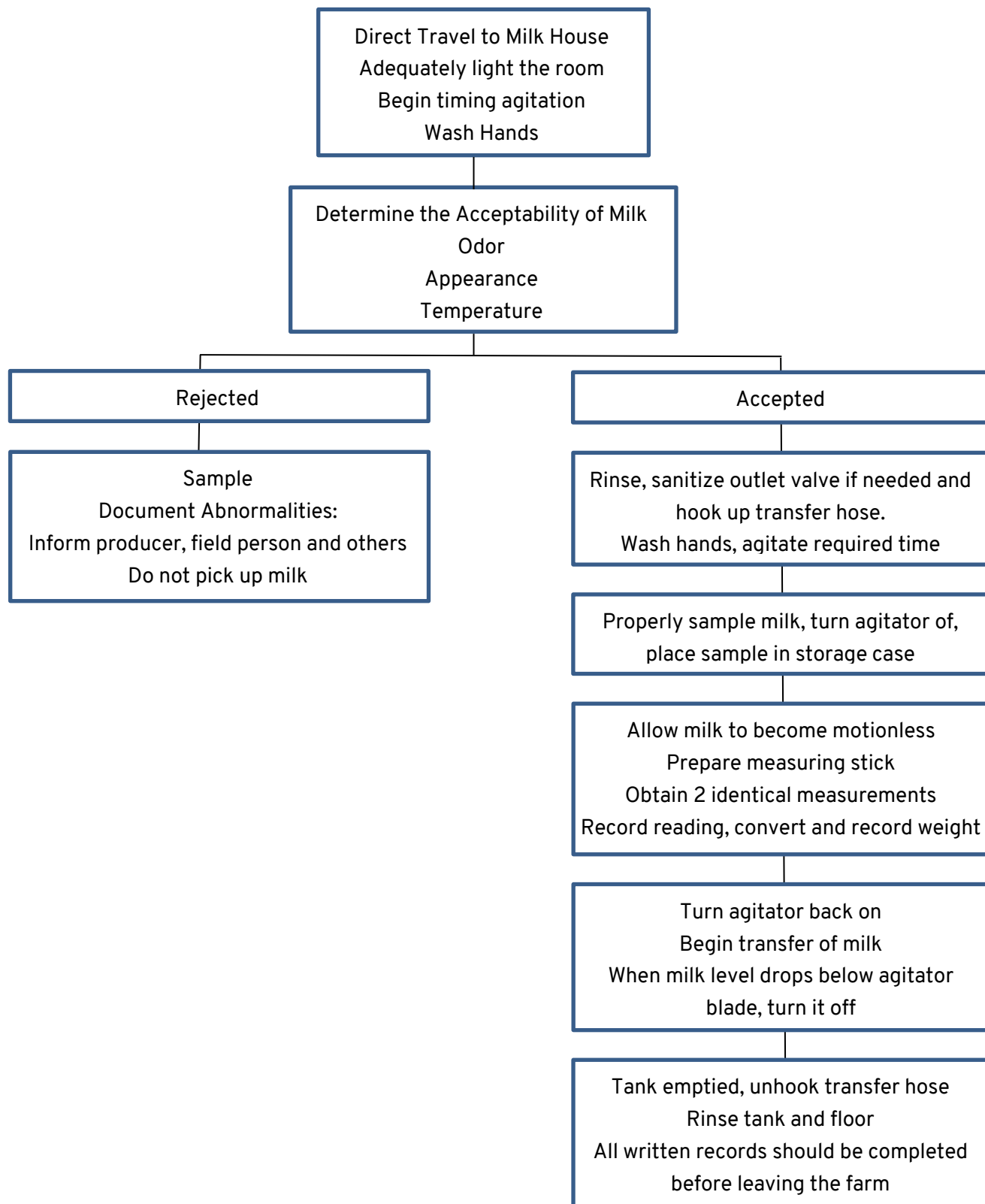
All product contact surfaces on milk tankers and their equipment shall be thoroughly cleaned and sanitized every 24 hours. The procedure for cleaning dairy equipment is as follows:

1. Immediately after use rinse dairy equipment with warm water
2. Wash with chlorinated dairy cleaner and hot water; discontinue wash before temperature falls below 140°F.
3. Follow the wash cycle with an acid rinse to remove any cleaner residues.
4. Sanitize with a chlorine or equivalent solution just prior to use.

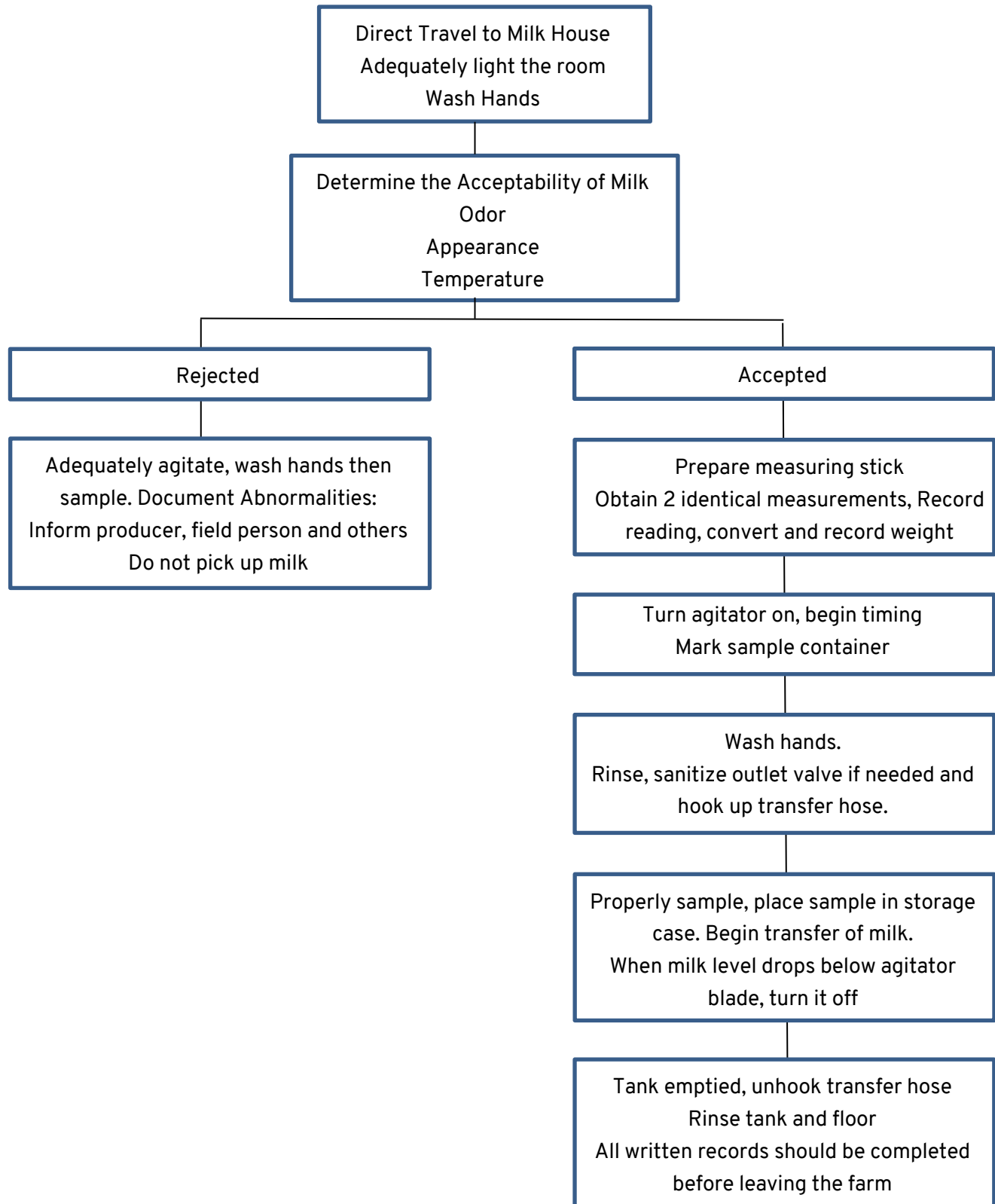
XIX. OREGON STANDARDS FOR GRADE A RAW MILK

Test	Grade A - Cow	Grade A - Goat/Sheep
Bacteria count	Not to exceed 80,000 per mL prior to commingling 300,000 per mL as commingled milk	Not to exceed 80,000 per mL prior to commingling 300,000 per mL as commingled milk
Somatic cell count	500,000 per mL or less	1,500,000 per mL or less
Antibiotics	No tolerance	No tolerance
Inhibitory substance	No tolerance	No tolerance
Pesticides	No tolerance	No tolerance
Added water	No tolerance	No tolerance

Agitator Running



Agitator Not Running



DEPARTMENT OF HEALTH AND HUMAN SERVICES FOOD AND DRUG ADMINISTRATION BULK MILK HAULER/SAMPLER EVALUATION REPORT	BULK MILK HAULER / SAMPLER PERMIT NO.	TANKER PERMIT NO.
	BULK MILK HAULER / SAMPLER	DAILY PICKUP NO.

ADDRESS OF BULK MILK HAULER / SAMPLER OWNER ADDRESS OF OWNER	NAME AND ADDRESS OF INSPECTION LOCATION NAME AND ADDRESS OF RECEIVING PLANT
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An evaluation of your sampling procedures showed violations existing in the Items checked below. You are further notified that this evaluation report serves as notification of the intent to suspend your permit if the violations noted are not in compliance at the time of the next inspection. (Refer to Sections 3 and 5 of the Grade "A" Pasteurized Milk Ordinance.)

HAULER SANITATION PROCEDURES

- 1. Pickup practices conducted to preclude contamination of milk contact surfaces
- 2. Hands clean and dry, no infections
- 3. Clean outer clothing, no use of tobacco
- 4. Hose port used, tank lids closed during completion of pickup.
- 5. Hose properly capped between milk pickup operations, hose cap protected during milk pickup.....
- 6. Hose disconnected before tank rinsed
- 7. Observations made for sediment/abnormalities
- 8. Sample collected from each producer's bulk tank picked up

BULK TANK SAMPLING PROCEDURES

- 9. Thermometer – Approved Type
 - a. Accuracy – Checked against standard thermometer every 6 months – accuracy (+)(-) 1 division
 - b. Date checked and checker's initials attached to case
- 10. Sample Transfer Instrument
 - a. Clean, sanitized or sterilized and of proper construction and repair
 - b. Sterile needle for aseptically dispensing a milk sample from the bulk tank sample septum into a sample container (i.e., vial)
 - c. Or an approved in-line sampler
 - d. Or an approved aseptic sampler
 - e. Or a sanitized sampling cock
- 11. Sampling Instrument Container
 - a. Proper design, construction and repair for storing sample dipper in sanitizer
 - b. Applicable test kit for checking strength of sanitizer (200 ppm chlorine or equivalent)
- 12. Sample Containers
 - a. Clean, properly sanitized or sterilized.....
 - b. Adequate supply, properly stored or handled
- 13. Sample Storage Case
 - a. Rigid construction, suitable design to maintain samples at 0°C - 4.4°C (32°F - 40°F), protected from contamination
 - b. Ample space for refrigerant, racks provided as necessary
- 14. Sample Collection – Precautions and Procedures
 - a. Sampling instrument and container(s) properly carried into and aseptically handled in milkhouse
 - b. Bulk tank milk outlet valve sanitized before connecting transfer hose
 - c. Smell milk through tank port hole
 - d. Observe milk in a quiescent state with lid wide open and lights on when necessary

- e. Test thermometer sanitized (1 min. contact time)
- f. Non-acceptable milk rejected
- g. Dry measuring stick with single-service paper towel
- h. Measure milk only when quiescent
- i. Do not contaminate milk during the measuring process
- j. Agitate milk before sampling at least 5 min. or longer as may be required by tank specifications
- k. Do not open bulk tank valve until milk is measured and sampled
- l. Temperature of milk, time, date of pickup and bulk milk hauler/ sampler name and license or permit no. recorded on each farm weight ticket
- m. Tank thermometer accuracy
 - 1. Tank thermometer accuracy checked monthly and recorded when used as test thermometer
 - 2. Accuracy of required recording thermometer checked monthly against standardized thermometer and recorded
- n. Temperature control sample provided at first sampling location for each rack of samples
- o. Temperature control sample properly labeled with time, date, temperature, producer ID and bulk milk hauler/sampler identification
- p. Sample containers legibly identified at collection points
- q. Sample dipper rinsed at least two times in the milk before transferring sample
- r. Dipper should be extended 6-8 inches into the milk to obtain a representative sample
- s. Sample cock properly sanitized and flushed prior to sampling
- t. Septum surface properly sanitized and single service sterile needle used
- u. Do not hold sample container over the milk when transferring sample into the container
- v. Fill sample container no more than ¾ full
- w. Rinse sample dipper in safe tap water, return to storage container, open tank valve, start milk transfer pump
- x. Immediately place milk sample in the sample case
- 15. Sample Collection – Storage and Transportation
 - a. Sample storage – refrigerant maintained no higher than milk level in sample containers – maintain sample temperature – 0°C - 4.4°C (32°F - 40°F), do not bury tops of containers in ice, protect against contamination
 - b. Deliver samples to laboratory promptly
 - c. Samples and sample data – submitted to laboratory – if by common carrier, use tamper proof shipping case with top labeled "This Side Up"

REMARKS (If additional space is required, please place information on the back of this Form or on a separate page.)

DATE	SANITARIAN	AGENCY
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XX. AVAILABLE ONLINE TRAINING VIDEO

Available for viewing at: https://www.youtube.com/watch?v=kG_lwnXD6pU