

**UNOFFICIAL TRANSLATION**



**MINISTERIAL REGULATION  
ON THE ESTABLISHMENT OF THAI AGRICULTURAL STANDARD ON  
GOOD MANUFACTURING PRACTICES FOR MILK COLLECTION CENTER  
AS A MANDATORY STANDARD  
B.E. 2559 (2016)**

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By virtue of Section 5 paragraph one and Section 15 paragraph two of the Agricultural Standards Act, B.E. 2551 (2008), the Minister of Agriculture and Cooperatives hereby issues this Ministerial Regulation as follows:

Section 1 This Ministerial Regulation shall come into force after three hundred and sixty-five days as from the date of its publication in the Royal Gazette.

Section 2 The Thai Agricultural Standard TAS 6401-2015 in accordance with the Notification of the Ministry of Agriculture and Cooperatives on the Establishment of Thai Agricultural Standard: Good Manufacturing Practices for Milk Collection Center under the Agricultural Standards Act, B.E. 2551 (2008) dated 21 September B.E. 2558 (2015) shall be established as a mandatory standard.

Given on the 28<sup>th</sup> Day of September B.E. 2559 (2016)

(General Chatchai Sarikalya)  
Minister of Agriculture and Cooperatives

**Remark :** Rationale for the promulgation of this Act is that: Raw milk is an important agricultural commodity of Thailand. However, almost of dairy farmers are small-scale and locate scatter all over the country. Milk collection center is necessary in order to collect raw milk before further processing for milk products. Therefore, the control of raw milk collection center is required ; starting from raw milk receiving, cooling, storage and transportation prior to deliver to milk processing plant in order to obtain good quality of raw milk that meets the standard and safe for consumers. Consequently the Notification of the Ministry of Agriculture and Cooperatives on the Establishment of Thai Agricultural Standard: Good Manufacturing Practices for Milk Collection Center under the Agricultural Standards Act, B.E. 2551 (2008) was promulgated on 21<sup>st</sup> September 2015. The public hearing for stakeholders was conducted to follow Section 18 under the Agricultural Standard Act B.E. 2551. Thus, it is deemed necessary to establish the Thai Agricultural Standard: Good Manufacturing Practices for Milk Collection Center as a mandatory standard.

## THAI AGRICULTURAL STANDARD

### GOOD MANUFACTURING PRACTICES FOR MILK COLLECTION CENTER

#### 1. SCOPE

This standard establishes requirements for good manufacturing practices of milk collection center, starting from raw milk receiving, temperature reducing, storing, transporting, including farming extension in order to obtain raw milk with quality suitable for processing into product that meets the standard and is safe for consumers.

#### 2. DEFINITIONS

For the purpose of this standard:

2.1 Raw milk means milk produced from cow not less than three days after calving, and free from colostrum without either addition to it or extraction from it and not subject to any form of processing, except cooling. The term “milk” shall be used thereof.

2.2 Milk Collection Center (MCC) means an establishment where milk is received and collected from members whereby the milk is cooled down prior to delivering to the processing plants or other milk collection centers. This does not include the farm equipped with cooling tank.

2.3 Milk receiving area means an area in MCC designed to facilitate receiving and inspecting of milk. It is equipped with equipment and utensils that are hygienic.

2.4 Milk receiving equipment means specifically designed equipment for milk collecting, consisting of receiving vessels, collecting vessels, filter system, pipelines, pumps and other related equipment and utensils.

2.5 Plate heat exchanger (PHE) means a set of devices used for the immediate reduction of milk temperature through heat exchanging principle.

2.6 Storage tank means a specifically designed container used for milk storage, divided into:

2.6.1 Storage tank without cooling system. It is designed to store and maintain the temperature of pre-cooled milk.

2.6.2 Storage tank with cooling system (cooling tank). It is designed with built-in cooling system to reduce and maintain the temperature of milk.

2.7 Cleaning-in-Place (CIP) means a method of cleaning of interior surfaces of receiving and storing equipment including whole system of transferring pipelines without disassembly.

2.8 Member means a dairy farmer who is registered as a member and commits to deliver produce only to a MCC. The farmer shall not register in duplication with other MCCs.

2.9 Traceability/product tracing means the ability to follow the movement of a food through specified stage(s) of production, processing and distribution.

### **3. REQUIREMENTS**

Items and Requirements of Good Manufacturing Practices for Milk Collection Center are shown in table 1.

#### **Table 1 Items and Requirements of Good Manufacturing Practices for Milk Collection Center**

**(Section 3)**

Items	Requirements
<b>1. Establishment and Facilities</b> (1) Location	1.1 Locate in the area with environment that poses no risk of contamination causing any adverse effect to the quality of milk and the safety of consumer. In case of potential risk, preventive measures shall be in place.
(2) Building	1.2 Structure of the building shall be sturdy, easy to clean and maintain, and able to prevent cross contamination that cause adverse effect to the quality of milk and the safety of consumers. 1.3 The building and surrounding areas are clean. 1.4 Interior building design and processing lines layout shall facilitate hygienic practices to reduce contamination during operation that cause adverse effect to the safety of consumers. 1.5 Availability of adequate areas for operation, proper separate into areas for milk receiving, quality control and testing, installed machine, chemical storage and office.
(3) Equipment and utensils	1.6 There shall be adequate numbers of equipment and utensils, appropriately installed to facilitate operation and cleaning. 1.7 Pumps, valves, piping system and hoses shall be durable, clean and hygienic. Particularly, the parts that directly contact with milk shall be made of permitted materials, non corrosive and chemically non reactive with milk. They can be cleaned thoroughly. 1.8 Milk hoses and water hoses, including pipelines and other utensils used jointly with such hoses shall be clearly separated according to their purposes of use. 1.9 Milk receiving vessels shall be hygienic and convenient for use with adequate capacity. 1.10 Milk receiving equipment shall be clean, adequate capacity and appropriate for use. 1.11 Milk storage tank, pipes and valves shall be designed and installed to facilitate thoroughly cleaning and disinfection, including complete liquid draining. 1.12 Equipment for weighing and measuring, which are important for operation, shall be precise and accurate. Such equipment shall be calibrated at least once a year and verified periodically.
<b>Items</b>	<b>Requirements</b>
<b>(4) Facilities</b>	1.13 Operation room shall have adequate lighting.

	1.14 Availability of adequate ventilation for operation.
	1.15 Availability of adequate cleaning facilities.
	1.16 Availability of adequate personal hygiene facilities and toilets.
	1.17 Availability of adequate space and facilities for washing empty milk cans.
<b>(5) Utility system</b>	1.18 Availability of power system with adequate power supply.
	1.19 Lighting equipment is adequate and installed in hygienic manner.
	1.20 Availability of back up power generator or appropriate measures for milk management during the blackout.
	1.21 Water, either in contact with milk or surface in contact with milk, shall be in compliance with Notification of Ministry of Public Health entitled Drinking water in tightly sealed container. Water supply at the MCC shall be adequate.
	1.22 Water used, otherwise, in production areas shall be clean or treated as necessary.
	1.23 Water shall be tested for its quality according to the standard at least once a year.
<b>2. Control Operation</b>	
<b>(1) Milk receiving</b>	2.1 Establish milk quality specifications and receiving inspection procedures.
	2.2 Receive milk from registered members or other MCC, in case of receiving milk from other MCC, milk temperature shall not be higher than 8 °C.
	2.3 Measures for control of delivery time of milk from farm to MCC shall be in place.
	2.4 Milk shall be rapidly managed for the temperature reduction process.
<b>(2) Milk temperature reduction</b>	2.5 Milk cooling system shall have adequate cooling capacity for the amount of milk.
	2.6 In case of using PHE, milk temperature shall be reduced to not higher than 4 °C immediately after passing through the PHE. In case using storage tank equipped with cooling system, milk temperature shall not be higher than 4°C within 2 hours.
	2.7 Availability of water quality control and filtration in the cooling water pipeline system.
<b>Items</b>	<b>Requirements</b>

	2.8 Temperature measurement device for water inlet-outlet and milk outlet shall be installed at a proper position and functional.
	2.9 Times and cold water temperatures before and during milk temperature reduction shall be recorded.
	2.10 Times and milk temperatures after passing the temperature reduction shall be recorded.
<b>(3) Milk storage</b>	2.11 Store milk in clean storage tanks, which can prevent milk from contamination.
	2.12 Storage tank shall maintain milk temperature effectively. Milk temperature shall be recorded periodically.
<b>(4) Milk quality inspection</b>	2.13 Availability of milk quality inspection/testing plan and implement accordingly.
	2.14 Apparatus for milk quality inspection and testing shall meet the standard.
	2.15 Availability of technically sound methods and proper apparatus for milk sampling.
<b>3. Maintenance and sanitation</b>	
<b>(1) Cleaning</b>	3.1 Measures on cleaning for operation buildings and surrounding areas shall be in place.
	3.2 Appropriate measures on cleaning for equipment and utensils including disassemble parts or others, apart from the CIP system shall be in place.
<b>(2) Cleaning In Place (CIP)</b>	3.3 Adequate and appropriate CIP systems for thorough and effective cleaning shall be in place.
	3.4 Availability of operating manual and record of CIP system management inspection for both equipment and milk transport vehicles, i.e. duration of cleaning, temperature, concentration of chemicals used and chemicals and water flow rates.
	3.5 Temperature measurement devices shall be installed in the CIP system at the appropriate position that functions properly and accurately.
	3.6 Concentration of chemicals shall be checked at each application.
	3.7 Chemical residues in the system shall be properly inspected.
<b>(3) Maintenance of equipment and utensils</b>	3.8 Inspection and maintenance programs of equipment and utensils shall be available.
<b>(4) Pest Control</b>	3.9 Pest control measures shall be in place.
<b>Items</b>	<b>Requirements</b>

<b>(5) Chemical management</b>	3.10 Non food chemicals, i.e. cleaning agents, lubricant, including their containers shall be managed hygienically.
	3.11 Chemicals shall be stored separately and clearly labelled.
<b>(6) Waste water and waste management</b>	3.12 Waste water treatment procedures before discharging treated water into public water resources shall be provided.
	3.13 Appropriate disposal procedures of garbage and waste shall be available.
<b>4. Personal hygiene</b>	4.1 Personnel, including those engaged in milk transport, shall behave and operate in hygienic manner and have medical examination once a year.
	4.2 Personnel shall properly maintain their personal cleanliness during operation, such as wearing protective clothing, hair covering, and mask.
	4.3 Visitor who enters the operation area shall adhere to personal hygiene provisions.
<b>5. Transportation</b>	5.1 Milk transport tanker shall be insulated to maintain milk temperature not higher than 8°C until reaching its destination.
	5.2 Prepare milk transporting appropriately and hygienically. Record the relevant information.
	5.3 Standard sampling method shall be provided. Milk from transport vehicle shall be sampled for quality inspection before leaving the MCC. In case of non compliance, corrective actions shall be performed.
	5.4 Control the milk being transported to the processing plant.
<b>6. Traceability</b>	6.1. Availability of traceability system to known sources of incoming milk and their delivered places.
	6.2 Availability of management for customer complaint.
<b>7. Training</b>	7.1 Personnel shall be trained on their capability related to roles and responsibilities such as production processes, hygiene, and milk quality inspection.
	7.2 Availability of personnel training programs and evaluations.
<b>Items</b>	<b>Requirements</b>



<b>8. Farming extension system for members</b>	8.1 Member registration record and farm data shall be up to date. Milk shall be received from registered farm only. One member shall be registered to only one MCC, without duplication.
<b>(1) Individual farm Extension</b>	8.2 Availability of extension personnel and activities to improve milk quality production for members e.g. training.
<b>(2) Individual farm member evaluation</b>	8.3 Availability of milk quality evaluation system for member.
<b>(3) Milk quality encouragement for member</b>	8.4 Milk quality and evaluation results shall be informed back to member.
<b>(3) Milk quality encouragement for member</b>	8.5 Certain milk purchasing period shall be scheduled.
<b>(3) Milk quality encouragement for member</b>	8.6 Purchased price of milk shall be according to quality.
<b>9. Documentation and records</b>	<p>9.1 The following data shall be recorded :</p> <ul style="list-style-type: none"> <li>- Calibration of equipment for weighing and measuring (Section 1.12)</li> <li>- Treatment of water used in production processes and water quality test results (Sections 1.22 and 1.23)</li> <li>- Control operation for milk receiving, temperature reduction, temperature records, quality inspection, storage and transportation (Sections 2 and 5)</li> <li>- Milk quality inspection results in processing steps (Section 2.(2))</li> <li>- Cleaning and maintenance of equipment and utensils, buildings and surrounding areas (Sections 3(1) and 3(3))</li> <li>- CIP system (Section 3(2))</li> <li>- Pests control and chemicals management (Sections 3(4) and 3(5))</li> <li>- Personal hygiene (Section 4)</li> <li>- Training records (Section 7)</li> <li>- Activities of farming extension system and milk quality evaluation results (Section 8)</li> </ul>
	9.2 Records shall be kept for at least 3 years.