A Plan for the Milk House

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The accompanying plan of a milk house was designed to meet the minimum requirements of most cities in and adjacent to Illinois, at a low cost for house and overhead. This house, if kept painted, will be attractive. Its simplicity enables anyone accustomed to the use of tools to build it at a minimum expense.
General Requirements of Milk House

Use and Location. To meet the requirements of most cities, the milk house or milk room should be used only for the handling and storing of milk and the storing of clean cans and utensils. In order that it will be free from undesirable odors it should be so located that there will be natural drainage away from the building and it should be at least 50 feet from manure pits and outhouses.

Outside Connection. No doors or windows or other openings should connect the milk house with any rooms used for sleeping or domestic purposes or directly with the dairy barn. A well-ventilated passageway connecting the house with the barn is permissible if self-closing doors are so arranged that the door of the milk house and the door of the barn will not be open at the same time.

Floors. Make floors of an impervious material and slope them so they will drain properly.

Waste. Arrange to dispose of waste water in such a way as not to create a nuisance.

Construction Materials. Wood, concrete block, brick, or tile may be used for construction. To permit easy cleaning, inside walls and ceiling should be of materials having a smooth surface and should be painted in order to make them nonporous. If the building is of frame construction, it must be lined in order to meet this requirement; for this purpose ceiling lumber or a good quality of shiplap is quite satisfactory. Wall board, plaster board, and various kinds of insulating board may also be used, tho these usually require a coat of plaster to give them a smooth and impervious surface.

Light and Ventilation. To provide adequate light and ventilation make window area equivalent to at least 10 percent of floor area. Screen all openings during fly seasons, using self-closing screen for doorway.

Cooling Tank. Provide a suitable cooling tank with ample space for cooling and storing milk. Ordinarily the space should be equal to three times the volume of milk to be cooled. The following figures will be useful in calculating the size of tank necessary:

- 5-gallon can displaces approximately .7 cubic feet
- 8-gallon can displaces approximately 1.1 cubic feet
- 10-gallon can displaces approximately 1.3 cubic feet

A water inlet and an overflow outlet must be provided. Place the inlet at side of tank opposite the overflow, and arrange it so the incoming water will be directed downward and made to circulate throughout the tank before reaching the overflow. Place the overflow outlet high enough so the water will come up onto the necks of the cans.

For 5-gallon cans, make overflow 16 inches high
For 8-gallon cans, make overflow 18 inches high
For 10-gallon cans, make overflow 21 inches high
The overflow from the cooling tank may be connected with the stock watering tank, if the stock tank is at a lower level, and thus conserve water.

Where ice is necessary for proper cooling, the tank should be insulated in order to conserve refrigeration. A tight cover so hinged that it may be raised or lowered easily is desirable.

**Specifications**

**Foundation.** The foundation is made of 1:2:4 concrete, 8 inches thick at base, sloped to 6 inches at top, as indicated on drawing. This wall should extend 1 foot or more below finished grade and at least to top of tank or higher, as desired, above grade. Eight 3/8-inch by 10-inch bolts are set in concrete, two on each side, to bolt superstructure to foundation. Old iron, such as pipe, silo hoops, or bridge rods, imbedded in concrete will strengthen it and prevent settling or cracks from frost. Make this iron continuous by lapping ends about 18 inches.

**Floor.** The floor is interlocked into the foundation wall by a groove made by nailing a 1-by-4-inch wood strip on inside of form at floor level (see details on plan drawing); this makes a tight joint. A slight curve formed at the juncture of wall and floor makes it easy to clean the floor and keep it sanitary. The floor should be 3 or 4 inches thick, constructed over a 4- to 6-inch cinder or gravel fill, troweled smooth and sloping to drain. Woven wire fencing for reinforcement will make the floor more durable.

**Tank.** The tank is made with a slight slope inside. A 2-by-4 bolted to top permits the installation of a hinged cover. A 2-by-6 sill on back and at ends of tank permits the fastening of hinges and sill at back. Unless cypress is used for this sill, it should be treated with an odorless preserving material to prevent early decay. (If an insulated tank is wanted, information may be secured from the Department of Farm Mechanics, University of Illinois, Urbana.)

The tank is set partly in the ground; this makes it easier to lift cans from the tank, to prevent freezing in winter, and to insulate against heat in summer.

Some find it advantageous to have a two-compartment tank, thereby maintaining two water levels. This avoids having to weight half-filled cans to prevent their upsetting. The overflow pipe in the shallower compartment may be screwed into a nipple set in bottom of tank so any height overflow may be used (see details on plan drawing).

**Superstructure.** A simple balloon construction is used with 2-by-4 members thruout, spaced 2 feet on center. If substitute siding or inside sheathing is used, 16-inch spacing may be desirable.

**Sills.**—The 2-by-4-inch or 2-by-6-inch (tank top) is first fitted to top of wall and bolts, then top of wall is bedded with a thin cement mortar, and sill is bolted into place. The studding is doubled or tripled at corners (see details on plan drawing) and nailed to sill with 16d nails. Use double plate. The rafters are 2-by-4's, same spacing as
studding, with cornice overhang. Shiplap roof sheathing is used, firmly nailed. Slate-surface roll-roofing or shingles may be employed. The ceiling is nailed direct to underside of rafters.

Windows.—Use two or more ventilating sash windows, preferably 6-light 9-by-12-inch panes. The shields may be made of wood or 26-gage galvanized iron and fastened together at top. This type of window is easily screened.

Door.—A paneled or glazed mill door may be used, or a simple, durable, inexpensive batten door may be made of one or two thicknesses of No. 116 drop siding or flooring. Priming the tongue and groove of the lumber with thick paint will lengthen its life and prevent undue swelling or shrinking. A screen door should be provided for the outside.

Ventilation.—Ventilation may be secured by a manufactured ventilator set on ridge, a homemade wood or metal top, or a pair of louvers set in gables (see details on plan drawing).

Platform.—A concrete platform in front of the door, with a foot scraper and brush at one side of it, are a help in keeping the house clean.

Materials for 8'-by-8' Milk House

Concrete, 1½ cu. yds. sand, 3 cu. yds. pebbles, 20 sacks cement.
Sills, 3 pcs 2" x 4" x 8′ and 1 pc 2" x 6" x 8′ for tank.
Studding, 20 pcs 2" x 4" x 5′ and 1 pc 2" x 4" x 16′ for gables.
Plate, 8 pcs 2" x 4" x 8′.
Rafters, 5 or 7 pairs, 2″ x 4″ x 6′.
Door, one 2'8″ x 6'8″ batten or mill.
Sash, 2 six-light 9″ x 12″.
Trim, 100 linear feet 1″ x 4″ B and better.
Lining, 300 bd. ft. (shiplap, flooring, ceiling, insulating or wall board).
Roof sheathing, 150 bd. ft.
Roofing, 1¼ squares.
Hardware and paint additional.
**Milk House**

**Size**
8 x 8 FEET

**PLAN**

**Corner Details**

**End Elevation**

**Side Elevation**

**CROSS SECTION**

**Details**

- **12" Revolving Ventilator**
- **2x4" Rafters**
- **16" or 24" O.C.**
- **PLATE 2-2"x4"**
- **Ventilating Window**
- **26 gage**
- **2x2" O.C.**
- **CONCRETE FLOOR**
- **2x4" Drying Rack**
- **OVERFLOW PIPE**
- **CONNECT TO STOCK**
- **TANK AT LOWER LEVEL**
- **Hose Bibb**
- **Valve**
- **Return Bend or TEE**
- **Tank Inlet**
- **Coupling**
- **Tank Outlet**
- **Earth Bank**
- **Trench**
- **Form Detail**
- **Coupling**
- **Louver Details Optional**
- **Home Made Ventilator**
- **Section of Drying Rack**