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Milk House Planning

Cooperative Extension, South Dakota State University

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Milk House Planning

Before building a milk house on your farm, you will want to consider such factors as location, size, construction and other information.

This material has been prepared to present the minimum requirements for a Grade "A" milk house. It is recommended for the production of manufactured milk.

LOCATION

Consider these factors: convenience to hauler—convenience to dairyman—surface and sanitary drainage—distance between parlor or stable—protection from wind and snow (locate on south or east side of barn, if possible)—outside of cow yards (milk house may be attached to or constructed within dairy barn.)

SIZE

Size of a milk house depends on the number of animal units you have or expect to have. A house 12 by 14 feet is the smallest recommended. This size does not include space for the vestibule for stanchion-type barns. Parlor-type barns do not need a vestibule.

FOUNDATION

Footings made of concrete—must extend at least 18 inches below grade level. Concrete blocks may be used below the grade if reinforcing steel is used. Lightweight blocks may be used above grade. The foundation shall extend at least six inches above the floor level. Recommended concrete mixture includes one sack of cement to six gallons of water; two parts of sand and three parts of gravel.

FLOOR

The floor should be four inches thick and reinforced with commercial mesh. It should slope one-fourth ($\frac{1}{4}$) inch per foot towards the drain. Use one sack of cement to five gallons of water. Also, work floor with a steel trowel to give it a smooth and finished surface.

WALLS

Walls must be of smooth, tight construction. They must be well painted or of a material not needing paint. A two-inch blanket insulation is recommended. Use a vapor barrier paper on the inside of the studs before the inside finish is applied.

CEILING

Insulate ceiling with a four inch fill. Other ceiling requirements are the same as for the walls.

LIGHTING

Lighting is of two types: artificial and natural light from windows.

Artificial lights must be used:

1. Light over wash vats, using a 100-watt incandescent or 40-watt fluorescent lamp;
2. Light over milk cooler, using a 75-watt light at each end—one foot back of and above the bulk tank.

Written by Ervin Kurtz, extension dairyman, and Louis Lubinus, extension agricultural engineer, with assistance from Clyde Helsper, State Department of Agriculture.

Milk House Planning

Cooperative Extension Service



F.S. 11

Window area should be equal to at least 10 per cent of the floor space. Storm sashes, in addition, are recommended for South Dakota.

VENTILATION

A power intake fan—no larger than 500-600 cubic-feet-per-minute air delivery—is recommended to bring in tempered air from the milk house attic. If dust contamination is a possibility, incoming air must be filtered. An anti-backdraft exhaust shutter totalling 120 square inches of free area should be provided.

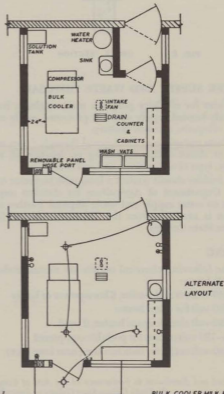


FIG. 1

BULK COOLER MILK HOUSE
100-240 GAL./DAY, CAP.

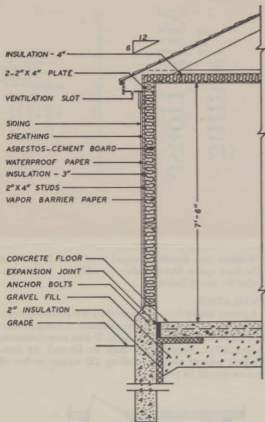


FIG. 2 CROSS SECTION

WATER SUPPLY AND WASTE DISPOSAL

Water for all dairy purposes must originate from a properly-located supply which is protected, easily accessible, adequate, safe and sanitary.

Waste material may be disposed through a trap, septic tank or direct outlet—depending on location of water supply, type of waste, slope and soil condition.

A builder should contact a local milk inspector or the State Department of Agriculture for detailed requirements on water supply and waste disposal. Further information is available from the Extension Service, South Dakota State College.

WIRING

The following electrical outlets are recommended in the milk house:

- 240-volt for milk cooler, $\frac{1}{2}$ horsepower or larger
- 240-volt for water heater
- 240-volt electric space heater, if used
- 2-120-volt outlets for portable equipment
- 240-volt outlet for bulk hauling (near hose port)

HEATING

South Dakota milk houses should be heated to prevent pipes from freezing and to make working conditions more comfortable.

—If electric heat is used, install 15 to 20 watts per square foot—if recommended insulation is used.

—Bottled gas heaters are very satisfactory, should be vented.

—Heat produced from the milk-cooling system will somewhat reduce heat costs.

—By using a thermostat, you can make your heating unit completely automatic.

—A well insulated milk house reduces heating costs.

DOORS

(1) Vestibule doors should open outward. They should be of solid construction and self closing.

(2) If a single outside door is used, it must swing outward and be solidly constructed. It is recommended that the outside door be permanent and be used in conjunction with screen and storm doors. If storms or screens are used the permanent door may swing inward.

SUMMARY

Experienced dairymen have found that a milk house—well planned, well constructed, properly located and properly equipped—is an aid to production of high quality milk. Also, it is labor saving. In the long run, it is a worthwhile investment.

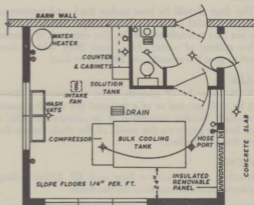


FIG. 3

WIRING KEY	
	150 W FLOOD LIGHT
	BULB SOCKET
	120 OUTLET
	240 OUTLET

BULK COOLER MILK HOUSE
280-430 GAL/DAY CAPACITY