

How to Reduce Labor, Steps, and Costs in Dairying

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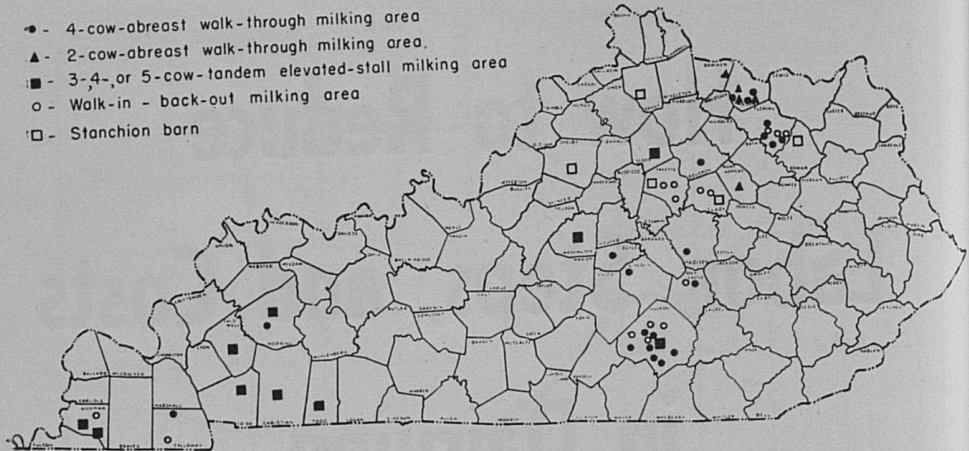


Fig. 1.— Location of milking parlors and stanchion barns included in the study reported in Kentucky Bulletin 589, on which this circular is based.

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How To Reduce Labor, Steps, and Costs in Dairying

By Harry M. Young, Jr., and George B. Byers

During the past few years the share of milk production costs going to labor has increased, while the share going to feed has become smaller. Greater emphasis on grassland farming may offer a partial explanation of this shift. On the other hand, the rate of increase in feed costs has been much less than that of labor. The latter now makes up nearly a third of the total cost of producing milk in Kentucky. It is second only to cost of feed.

How can labor needs be reduced? How much can labor needs be reduced? What are the investments necessary to reduce labor needs? What building arrangements are most suited to reducing labor needs?

To answer these and other questions, the Kentucky Agricultural Experiment Station began studies in 1947. Results are reported in Bulletin 589, "Effect of Work Methods and Building Design upon Building Cost and Labor Efficiency for Dairy Chores," of the Kentucky Experiment Station. Based on these findings, certain definite statements and recommendations now can be made.

REASONS FOR DAIRY EXPANSION

Dairying in Kentucky is expanding because of land suitable to grazing livestock, family labor supply, climate, and markets. Grassland farming, suitable growing season for forage crops, increased production per cow, farms with available family labor, a population under-supplied with locally produced milk, and being near heavily populated industrial areas furnish an attractive opportunity for expansion of dairy farming in the state.

MACHINE MILKING versus HAND MILKING

A milking machine is a substitute for labor. Therefore, economical use of it largely depends upon cost of operation compared with the value of labor saved through its use—if hired help is reduced, or if farm enterprises make use of labor released by the machine. Convenience and ease of doing the milking, flexibility in use of labor, and sanitation opportunities are further advantages of machine milking. With five or more cows, the milking machine was found to save enough labor to equal the cost of owning and operating two single-unit milkers.

Machine milking allows the farmer and members of his family or hired workers to relieve each other for vacations, weekends, and holiday periods, apparently without disturbing the behavior of the cows. Dairymen indicate that with machine milking, changing workers does not disturb the cows as much as changing workers who milk by hand.

In general, with the present equipment costs, machine milking is more economical for herds of five cows or more when labor is valued from 35 cents to 75 cents an hour. Combined cost of labor, electricity and equipment per cow is about the same for hand milking and machine milking with four to five cows (Fig. 2).

Average costs per herd in owning and operating milking machines and other dairy equipment for 28 herds studied are:

Cows per herd	15
INVESTMENT: two single-unit milkers, pump, motor and pipeline	\$329
Depreciation, annually (life 15 years)	\$22
Repairs, annually	\$11
Interest, annually	\$10
Total annual cost per herd of 15 cows	\$43
Total daily cost per herd	\$.12
Total daily cost per cow	\$.008
Electricity for milker per cow daily	\$.0025
INVESTMENT in other dairying equipment	\$613
Depreciation, annually (life 10 years)	\$61
Interest per herd, annually	\$18
Total annual cost per herd	\$79
Total daily cost per herd	\$.22
Total daily cost per cow	\$.015
Electricity for cooler and water heater per cow daily	\$.012

Proper timing of work operations of the milking job is highly important. The worker must be ready to watch the machine carefully during final moments of the milking process for each cow.

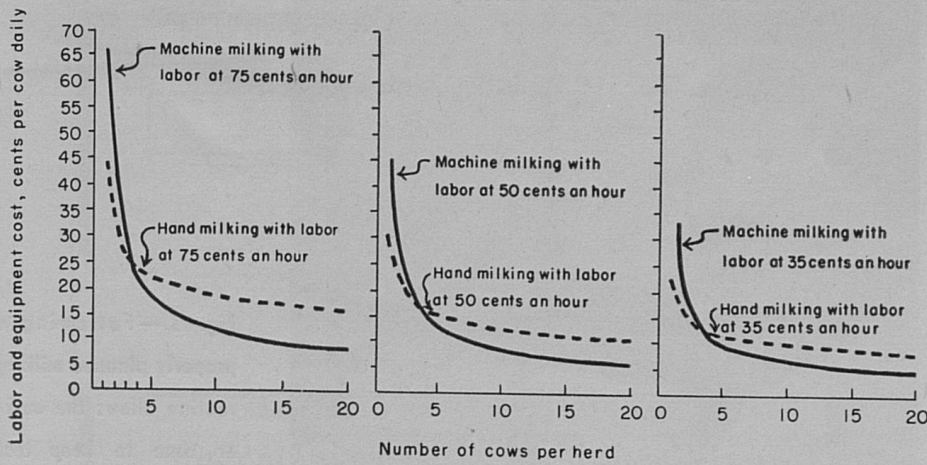


Fig. 2.— Daily costs of labor and equipment per cow for hand milking and machine milking. With wages for labor varying by areas of the state, and machine costs being fairly uniform for the state, three wage rates are presented with one set of machine cost data.

This will allow the worker time to keep the teatcups from creeping up on the cow's udder as the last milk is being removed. Further time can be saved by massaging each quarter of the udder and at the same time pulling downward firmly on the teatcup assemblage during the final part of the milking process (Fig. 3).

Following a well-planned milking routine for each cow provides for correct operation of the milking machine and substitution of machine stripping for hand stripping.

Work Routines, Buildings and Equipment

By using effective work methods, and having properly designed buildings with well-arranged equipment, a dairyman can do dairy chores in about half the time otherwise required. Because of labor costs, and the need for efficiency in all farm operations, the dairy farmer can well afford to follow work routines and to use an arrangement of buildings and equipment to make economical use of labor in dairying. Work methods, building location and arrangement, and kind and arrangement of equipment affect the time needed for milking, amount of walking, ease of doing dairy chores, and routine of handling and milking cows. Properly designed and arranged buildings and equipment can reduce overhead costs in dairying, as well as save time and walking in doing dairy chores.

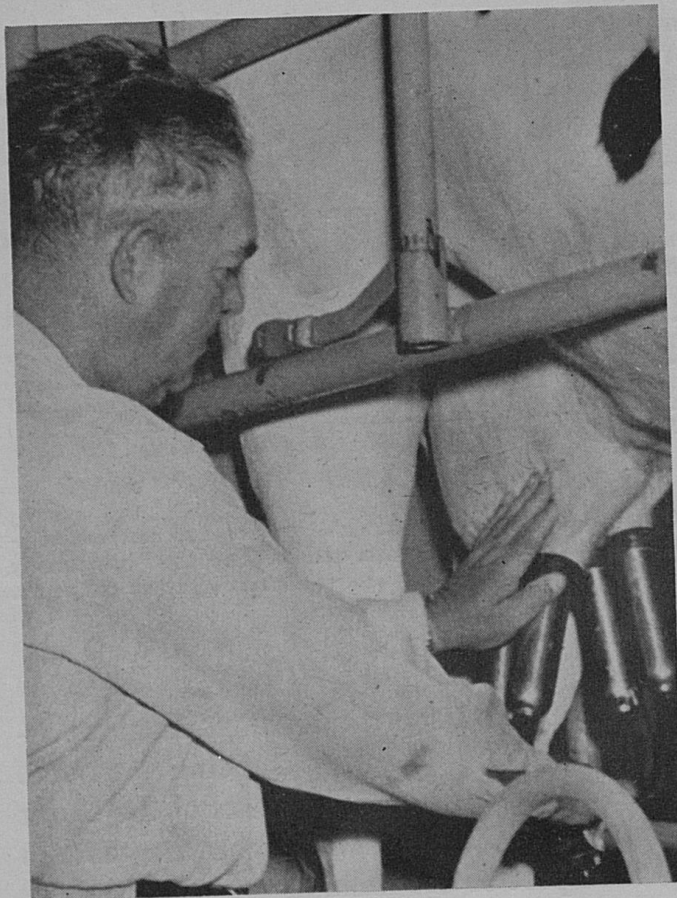
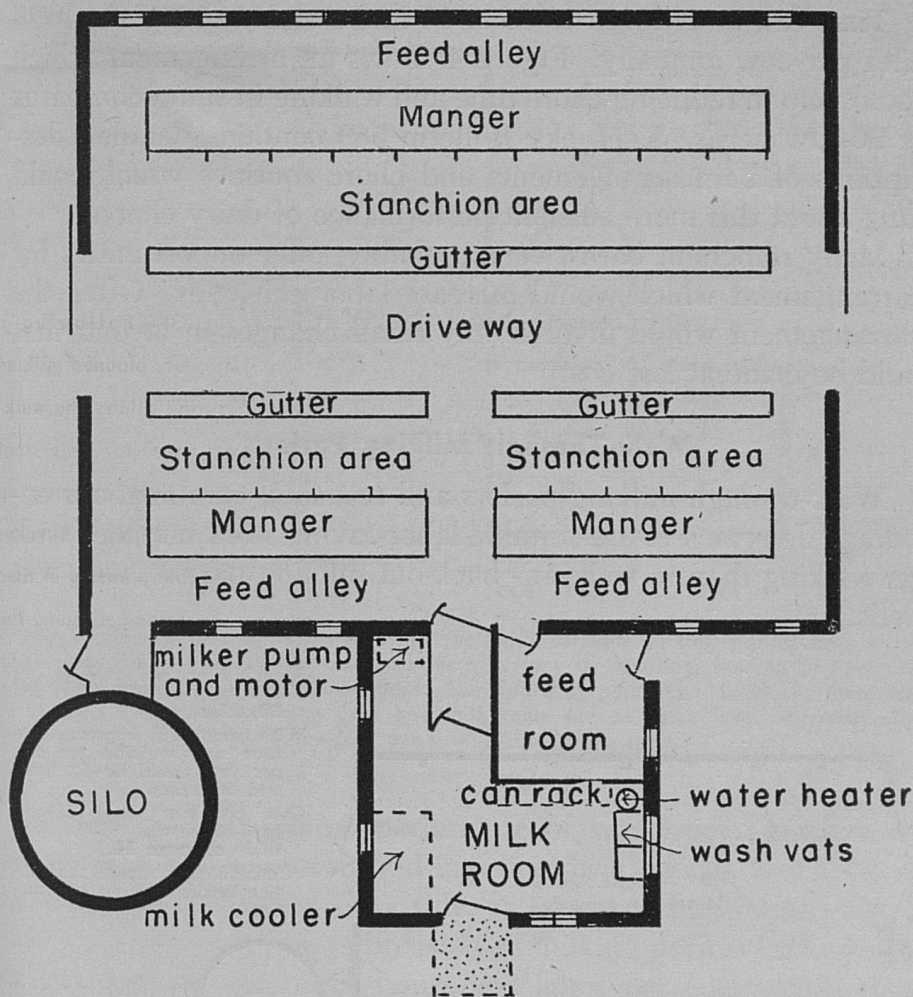


Fig. 3.— Following a properly planned milking routine allows the worker time to keep teat cups from creeping up on the udder, and makes possible a saving in time by machine stripping the cow.

Stanchion Barns

Labor requirements vary because of the type of building used for housing, milking, and feeding the cows, and because of the milking routine and equipment used by the worker. Man labor in doing daily dairy chores in stanchion barns of all types is about 120 man hours and 45 miles of walking per cow annually for machine milking. More labor is used in dairy chores for herds housed and milked in the usual stanchion barn, than for herds milked and fed grain in a walk-through milking parlor and housed loose in a rest shed.

Time and walking can be reduced by careful planning of barn arrangements, and by following proper methods in doing dairy chores. A good rule is to complete one job at or near the place where the next job begins. Proper location of feed room, silo, hay chutes, and mangers encourage a dairyman to follow this rule (Fig. 4).



Actual time and walking per cow per year—120 hours and 45 miles.
 With suggested improvements, time and walking per cow per year could be 77 hours and 20 miles.
 Cost per cow on a 20-cow-herd basis was \$408. (See Table on page 14).
 (Consult local health authorities before starting construction.)

Fig. 4.—Stanchion barn with hay loft, milk room, feed room and silo arranged for efficiency in handling, feeding and milking cows. Barn shown is for a 20-cow herd.

Facing cows outward in stanchion barns is a help in doing dairy chores, when there are two lines of cows (Fig. 4). Cows should be faced outward even though more walking and time are needed in feeding—feeding represents only 15 percent of total work time, while milking, cleaning the barn, and so on, make up nearly half of the total work time. Milking and barn cleaning are done in a smaller area if cows face outward than if they face inward.

Time can be reduced to 75 or 80 hours and walking about 20 miles per cow annually. Figure 4 shows an arrangement which would help in reducing chore time and walking in stanchion barns for 20-cow herds. Kentucky Bulletin 589 contains detailed descriptions of barn arrangements and chore routines which could bring about this more efficient performance of dairy chores.

Many stanchion barns, very probably, offer opportunities for rearrangement which would increase labor efficiency. Often the rearrangement would involve only small changes in layout, that could be made at low cost.

Walk-Through Milking Parlors

Walk-through milking parlors and rest-shed combinations encourage dairymen to use suitable labor-saving work methods with less walking than in walk-in - back-out milking parlors, with rest sheds.

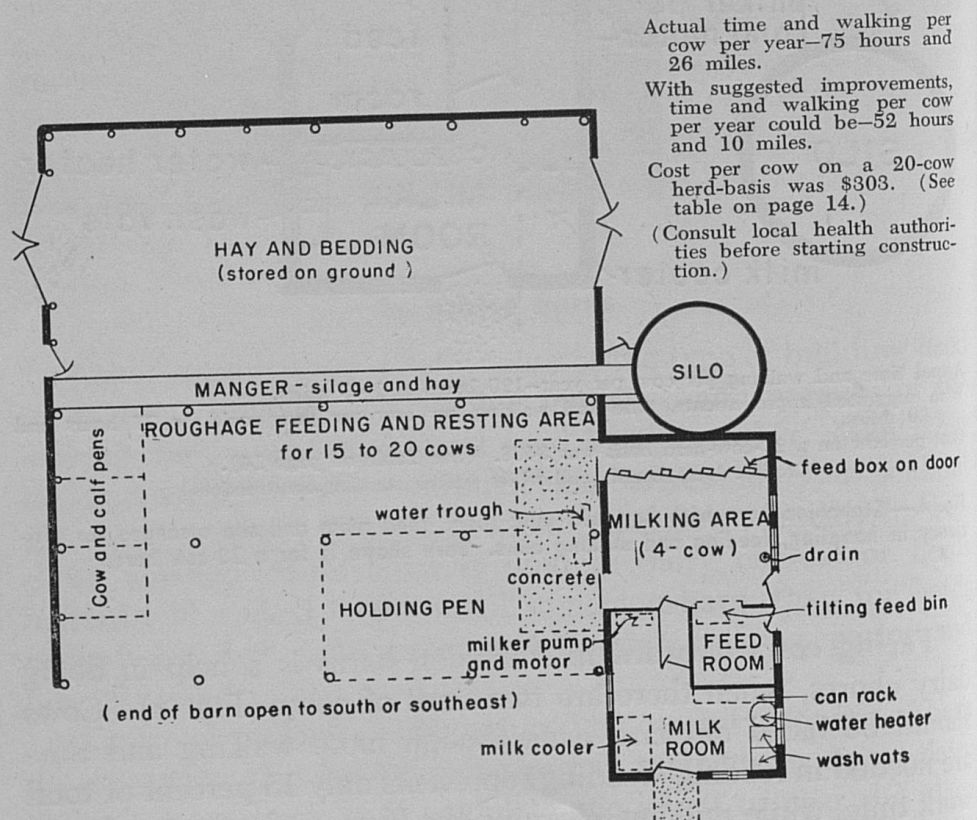


Fig. 5.— Four-cow-abreast, level-type, walk-through milking parlor, milk room, feed room, pole barn, and silo arranged for efficiency in handling, feeding and milking cows. Barn shown for 15-to-20-cow herd. See Kentucky plan, Ky. 11. 723-18. Milking area and milk room on the same level. Farmers were observed using 88 to 109 square feet per cow in the resting area.

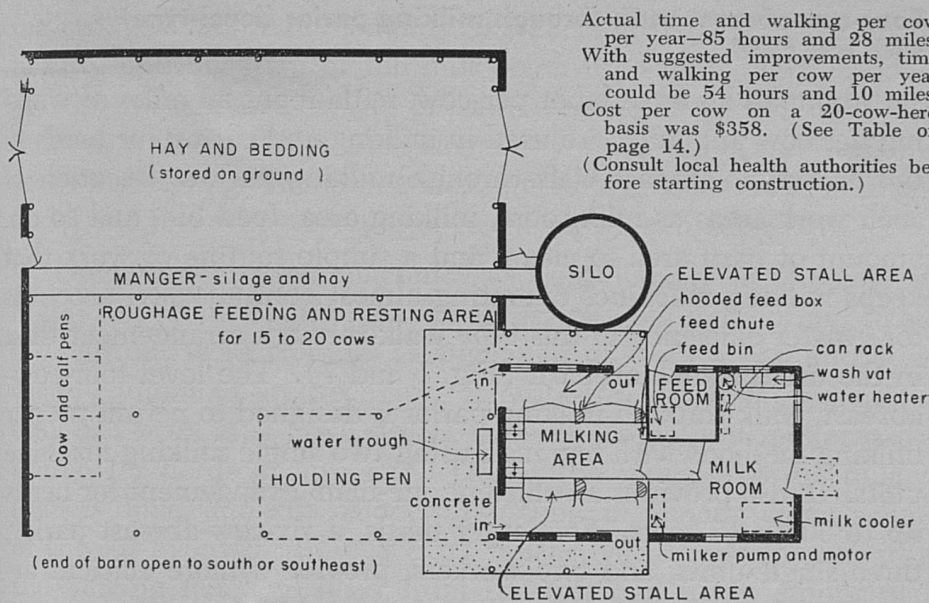


Fig. 6.—Four-cow-tandem, elevated stall-type, walk-through milking parlor, milk room, feed room, pole barn, and silo arranged for efficiency in handling, feeding and milking cows. Barn shown for 15-to-20-cow herd. See Kentucky plan, Ky. 11.723-21. Cows are in elevated stall area. Milking area and milk room are on same level. Farmers were observed using 88 to 109 square feet per cow in the resting area.

Walk-through milking parlors are of two types: tandem, in which two or more cows stand in a line, head to tail, and abreast, in which cows stand side by side, as in a stanchion barn (Fig. 5 and 6). Dairymen using abreast-type milking parlors walk slightly less, and use about 10 hours less labor per cow yearly than dairymen using tandem-type milking parlors. The amount of time usually required for dairy chores in these walk-through arrangements is only about two-thirds the time required in usual type stanchion barns.

Both walk-through arrangements allow assembly-line procedures in milking, and thereby encourage well-adjusted milking methods and proper machine stripping. Cows come to the work area, are milked, and then return to the barn by walking through a door in front of each cow. Thus, cows come to the worker instead of the worker having to go from cow to cow in stanchions. With cows walking forward through the door in front of each milking area, there is little or no risk of having a milking machine upset. Also, other cows eating or being milked are not disturbed when cows are turned in and out of the milking parlor.

Four-cow-abreast walk-through milking parlor (level-type) with rest shed

About 75 hours of labor per cow, with about 26 miles of walking per cow annually, are used in milking and caring for herds in the level-type-abreast walk-through milking parlor. Location of such work areas as milk room, milking area, feed bin, and so on, amount of barn area to clean, and a simple routine of work that keeps milking machines operating almost continuously, accounts for greater efficiency in this type walk-through arrangement than in the usual stanchion barn (Fig. 5 and 7). The level four-cow-abreast, walk-through milking parlor is designed to permit proper milking methods with one man using two single milking machine units. It also provides an efficient one-man arrangement for herds up to 30 or 35 cows. For larger herds, a six-cow-abreast parlor, three single-units, and two workers, provide a more efficient arrangement.

Where the milk room is located adjacent to the milking area, the dairyman has to walk along only 4 cows standing side-by-side, and therefore walking and time for moving equipment and empty-

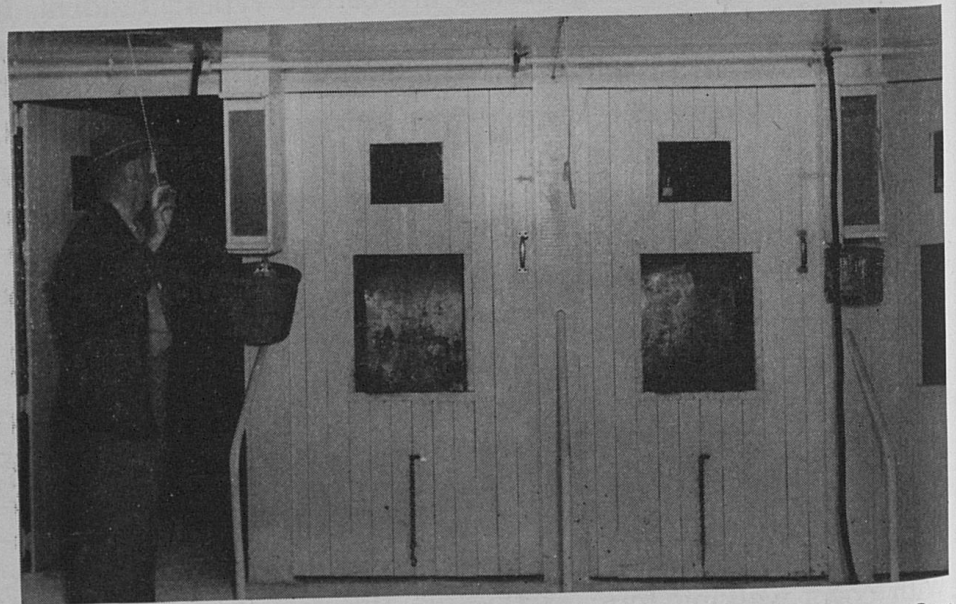


Fig. 7.— A low-cost, farm-constructed, 4-cow-abreast, walk-through milking parlor. Doors are opened by ropes. Chain on each door under the feed box is used when needed in fastening cows. Note the feed chute from overhead bin.

ing milk are less than in the usual stanchion barn. For a 20-cow herd, proper location of the milk room used with the four-cow-abreast milking area, makes possible a saving of $\frac{3}{4}$ hour and $\frac{3}{5}$ mile of walking daily. Additional saving in time and walking occur in cleaning the milking area, amounting to about 20 minutes and 1,400 feet when compared to the usual stanchion barn.

Operating milking machines as continuously as possible is highly important in getting efficient use of labor in dairying. Well thought out work routine, arrangement of work areas, and adequate equipment are necessary. In walk-through milking parlors, only one work area (two stalls) for each single unit milker is required for herds of any size. Thus, little moving of the milker units is done, and loss of operating time, in moving along a line of cows is avoided. Having extra milker pails to use in changing the milking machine head from the full pail to an empty pail avoids loss of operating time while the milk is being emptied.

Tandem—walk-through milking parlor (elevated stalls) with rest shed

An average of about 85 hours of labor per cow and 28 miles of walking per cow annually is used in milking and caring for herds in the tandem-type, walk-through milking parlor, with cows standing in elevated stalls.

Ease of doing milking chores is increased by having the cows on a higher level than the worker (Fig. 8). While no time is saved by using this arrangement of elevated stalls, squatting is eliminated. Construction of an elevated-stall walk-through arrangement is more expensive than an abreast-level walk-through arrangement.

Arrangement of the milking area (three to five cows standing head-to-tail) causes the labor to be about 10 hours more per cow annually than for herds milked in four-cow-abreast, walk-through milking parlors. With three to five cows standing in one line, head-to-tail, more walking is needed to turn cows in and out, feed grain, milk, empty milk, and clean the milking area than for the side-by-side type milking parlor. Further saving in time and walking could be attained if the stalls were arranged as shown in

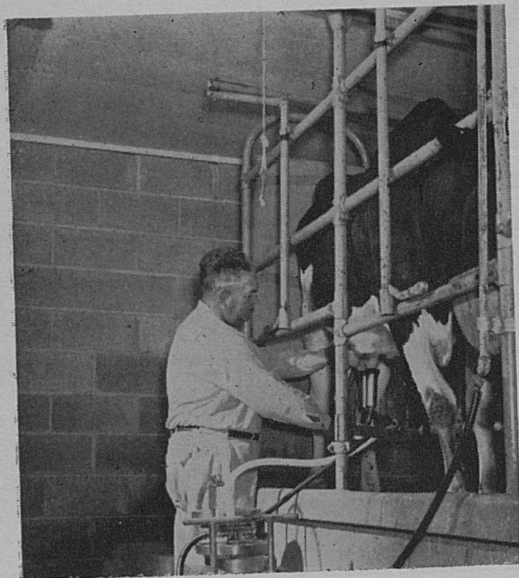


Fig. 8.—Ease of doing milking chores is increased by having the cows on a higher level than the worker. Elevated stalls eliminate squatting, but do not save time in comparison to the abreast, level-type milking parlor.

Fig. 6, instead of having one line of three to five cows standing head-to-tail.

Location of such work areas as milk room, milking area, feed bin, and so on, amount of barn area to clean after milking, and a routine of work that keeps milking machines operating a large part of the milking time accounts for a greater efficiency in this type of walk-through arrangement than in the usual stanchion barns. The arrangement as shown in Fig. 6 provides an efficient setup for one man milking with two single units. This arrangement will provide an efficient one-man operation for herds up to 30 to 35 cows. If larger herds are to be milked, two elevated stalls should be added, and two men should do the milking with three single milking machine units.

Walk-in - back-out milking area with loose housing combination

The walk-in - back-out milking area has come into use by dairymen who increase the size of their herds without increasing the number of stanchions. The result has been to make housing of dairy cattle more flexible rather than to make labor more effective. Walk-in - back-out milking parlors do not have a door in front of each cow; rather, the milking area is arranged similar to that of a small stanchion-type barn.

In a study of herds using walk-in - back-out milking parlors, the labor used in milking and taking care of the cows was 146

hours per cow annually. This was about 25 hours more per cow per year than was needed in the usual stanchion barn. Forty-three miles of walking per cow annually was done. This was about the same as required in the usual stanchion barn.

The difference in milking time was caused by milking machines standing idle while cows were turned out and others turned in. Most of the dairymen believed it necessary to stop the machines to avoid risks of a cow's turning over a milker unit when backing out. Also, cows being milked were disturbed by cows being turned out. As a result, usually more time was taken to milk a herd in the walk-in - back-out milking areas than for herds of the same size milked in the usual stanchion barns.

Convenient arrangement and location of places of work, feed, and equipment, and improvements in the way of doing the milking chores, could reduce time to about 80 hours per cow per year, and walking to about 21 miles per cow per year in this system.

SUGGESTED METHODS FOR IMPROVEMENT

Many improvements in work methods, buildings, arrangement of work areas and equipment, so as to fit them to the worker and the job, can bring about further practical reductions in time and walking. Kentucky Bulletin 589, "Effect of Work Methods and Building Design Upon Building Cost and Labor Efficiency for

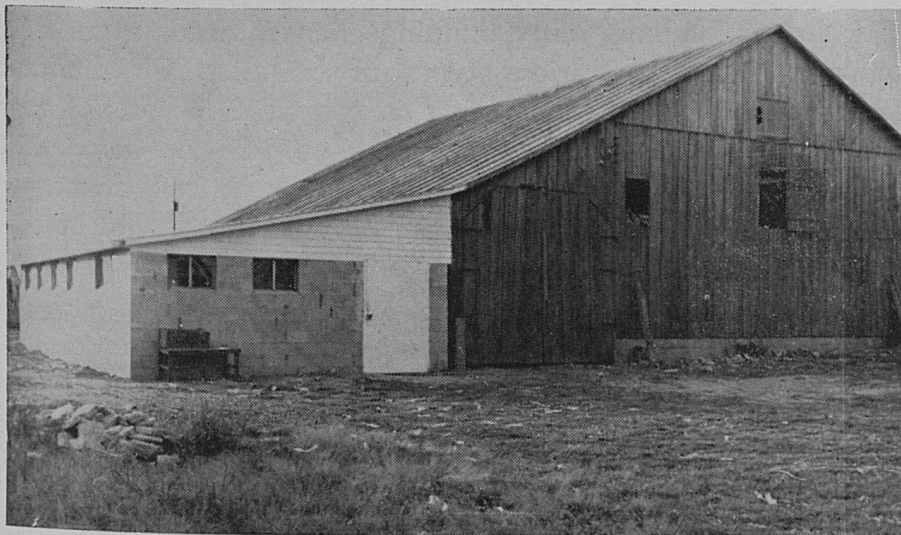


Fig. 9.— This walk-through milking parlor was added to an old, general-purpose barn. The barn was converted to a loafing shed. This combination offers a low-investment, practical opportunity for many farmers who are establishing efficient dairy enterprises.

Dairy Chores," describes the details of arrangements, work methods, and equipment necessary to bring about these suggested improvements.

Time and amount of walking required for methods and arrangements *actually observed* are given in the following table:

*Per Cow Annually
(all chores)*

Walk-in - back-out milking parlor	146 hours and 43 miles walked
Stanchion barn	120 hours and 45 miles walked
Tandem walk-through milking parlor ..	85 hours and 28 miles walked
Abreast walk-through milking parlor	75 hours and 26 miles walked

The amount of time and walking required for *suggested improved methods and arrangements* are given below:

*Per Cow Annually
(all chores)*

Walk-in - back-out milking parlor	80 hours and 21 miles walked
Stanchion barn	77 hours and 20 miles walked
Tandem walk-through milking parlor	54 hours and 10 miles walked
Abreast walk-through milking parlor	52 hours and 10 miles walked

Fig. 4, 5, and 6 show suitable building arrangements for bringing about the above suggested accomplishments.

Comparison of Building Costs

A farmer planning dairy building changes needs a guide in comparing costs of various types of buildings for different methods of dairying. Information on construction costs of new buildings is given in the following table on a 20-cow-herd basis.

By comparing the different arrangements on investment per cow, and labor used per cow, it can be seen that lowest invest-

Table 1.— Construction costs of dairy buildings for a 20-cow herd, 1951

Kind of building	Total cost	Cost per cow	Breakdown of total costs			
			Barn	Milk room	Milk room and milking parlor	Silo
Stanchion barn	\$8,160	\$408	\$5,548	\$1,164	—	\$1,448
Loose housing (pole barn)						
Tandem milking parlor with elevated stalls	7,152	358	2,293	—	3,411	1,448
Abreast, level, milking parlor	6,056	303	2,293	—	2,315	1,448



Fig. 10.— A well-arranged, easily cleaned, and well-lighted milk room of sufficient size, located adjacent to the milking parlor or stanchion barn, provides an opportunity for clean and efficient handling of milk.

ment methods and lowest labor methods occur for the same arrangement.

Details of construction costs, at 1951 prices are to be found on pages 33, 34, 53, 54, and 55 of Kentucky Bulletin 589. This information may be helpful to a farmer in making decisions, whether he plans to construct a dairy building or remodel one.

BEDDING

Bedding for dairy cows averages about 900 pounds of straw per cow annually for stanchion barns, and about 1,590 pounds per cow for herds kept in loose housing barns. Cows in stanchion barns use an average of 5 pounds of straw daily for bedding, while herds in loose-housing barns use 9 pounds of straw daily. If milking parlors are used, loose housing of the cows has a part to play in improving the efficiency of labor used in dairying; but more space to bed each cow, greater freedom of movement of

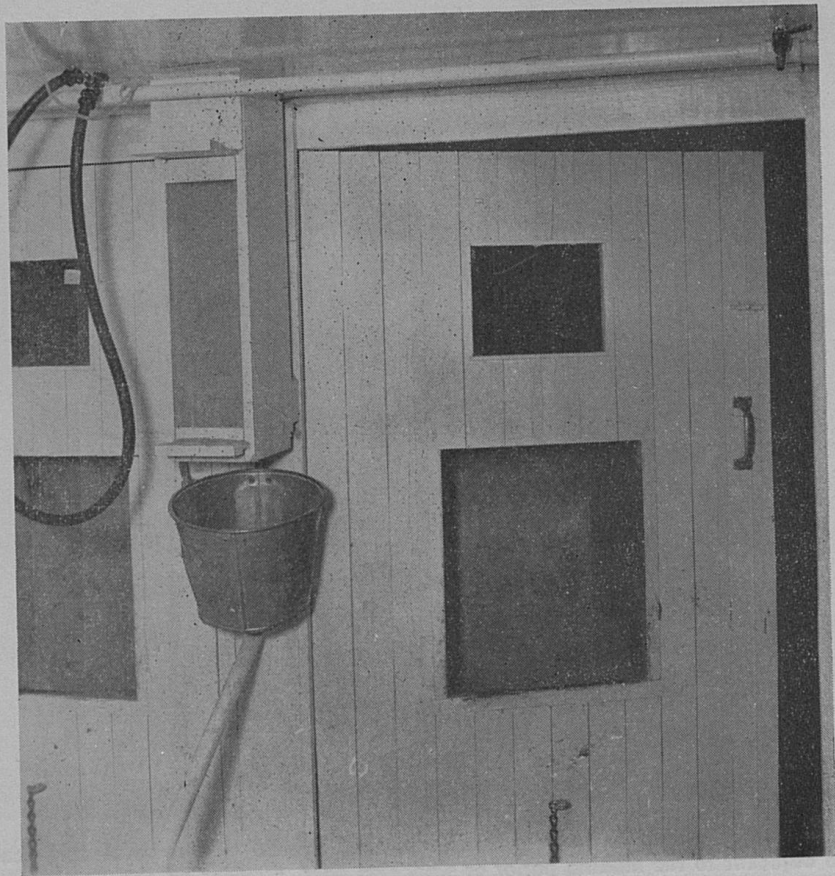


Fig. 11.—Overhead feed bins can be used in putting feed in convenient places in the milking area. In this abreast-type, walk-through milking parlor, a feed chute is placed between two cows. Note feed box openings on right and left of feed bucket. See Fig. 12 for rear view of feed boxes.

cows, and greater depth of manure increases bedding needs for loose-housing arrangements. Plans for the dairy enterprise must include provision for obtaining enough bedding of a suitable type.

Effective use of bedding can be made by spreading a fresh supply each evening after the cows have been milked. The amount of bedding needed can be reduced by spreading rock phosphate in the loafing area. Rock phosphate makes the manure-pack more firm. Spreading the phosphate once a week is believed to be sufficient. About 3 pounds of rock phosphate per cow was spread each week by the farmers following this practice.

More bedding is needed to keep the cows clean when they rest on the manure pack. Location of feed racks and holding-pen areas influence the use of bedding. Less bedding is needed if

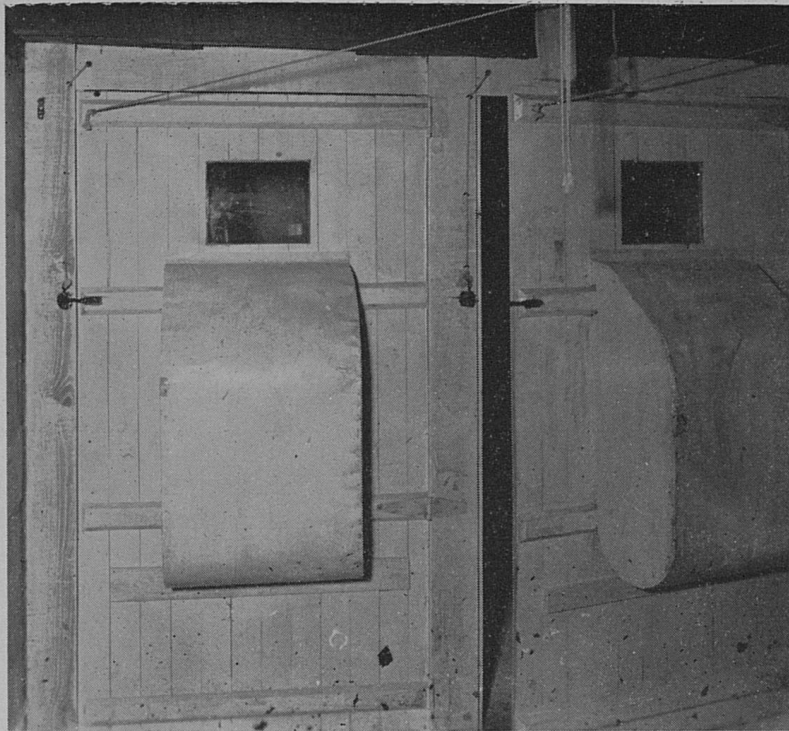


Fig. 12.—Rear view of feed boxes on doors in a farm-constructed, abreast-type, walk-through milking parlor. See Fig. 11 for front view of feed boxes and view of feed chutes.

the cows do not walk through the sleeping area in going to the milking parlor, and if feed mangers are located to one side of the loose-housing area.

Use of enough bedding keeps cows cleaner, conserves more liquid manure, and results in larger amounts of plant food nutrients being returned to the soil, offsetting most or all of the extra cost of bedding. By saving liquid manure, each ton of straw bedding conserves about \$11.80 worth of plant food nutrients. A ton of straw conserves about 3 tons of liquid manure.¹ With

¹The capacity of various bedding materials to absorb liquids is shown by the following data taken from Ohio Experiment Station Bulletin 605, "Farm Manure":

	<i>Pounds bedding required to absorb 100 lbs. liquid</i>	
Wheat straw	45	
Oat straw	35	
Rye straw	45	
Chopped straw	20-30	
Cornstalks (shredded)	25-35	
Sawdust	25	
Wood shavings.....	25	softwood
	45	hardwood
Leaf litter	25-60	

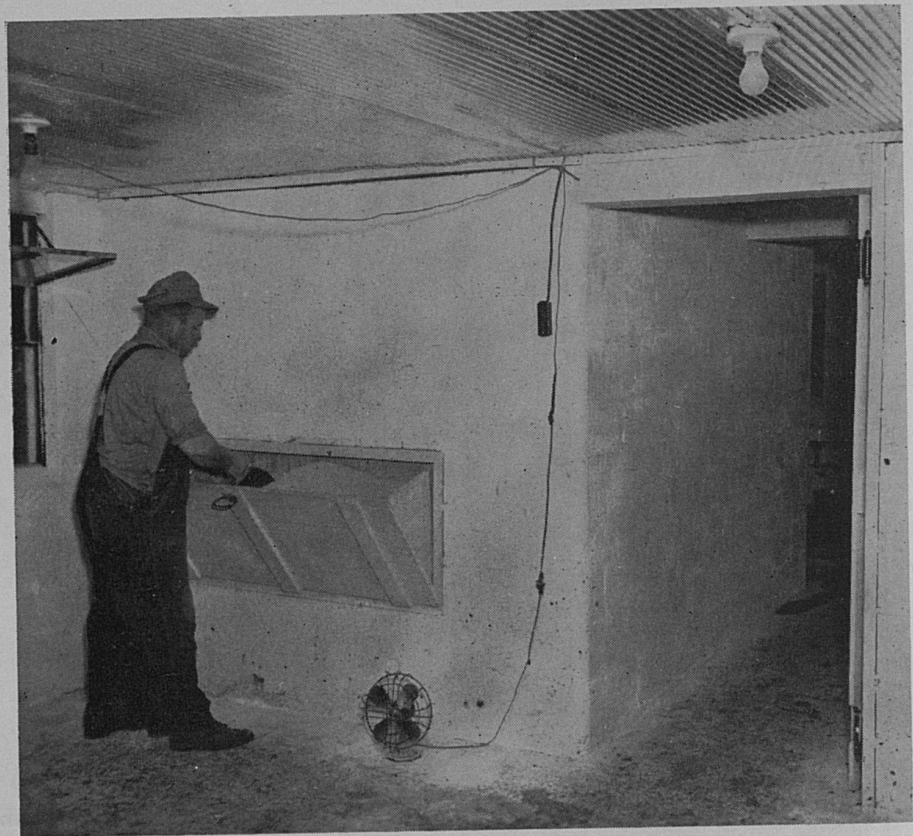


Fig. 13.—A homemade, tilting feed bin in front of feed room. In this abreast-type, walk-through milking parlor, the tilting feed bin is located behind and near the center of the line of four cows. Little difference in time of feeding is noted between the arrangement shown in Fig. 11 and this arrangement with the tilting feed bin properly located. See Fig. 5 and 6 for diagram showing proper location of feed bin with respect to work areas.

each ton of the manure averaging 10.7 pounds of nitrogen, 2.1 pounds of phosphorus and 9.4 pounds of potassium, a ton of straw used as bedding for dairy cows produces 4 tons of manure or 42.8 pounds of nitrogen, 8.4 pounds of phosphorus, and 37.6 pounds of potassium. Valued at 18 cents a pound for nitrogen, 18.9 cents a pound for phosphorus, and 6.8 cents a pound for potassium, the ton of straw saves \$7.70 in nitrogen, \$1.56 in phosphorus, and \$2.56 in potassium—a total of \$11.82 for each ton of straw bedding.

Addition of humus to the soil and greater comfort and cleanliness of cows further increases the importance of using sufficient bedding. Cows have warm and comfortable resting conditions on well-bedded manure packs. Less injury occurs to udders, hocks, and feet of cows in loose-housing arrangements than in stanchion barns.

ADVANTAGES AND DISADVANTAGES OF ARRANGEMENTS

The following advantages and disadvantages are listed in comparing each building arrangement described earlier in this circular. Before building or remodeling, it is suggested that the farmer consult local health authorities. The local county agent may be able to provide assistance regarding dairy barn plans. Blueprints may be obtained at cost from the Agricultural Engineering Section, College of Agriculture and Home Economics, University of Kentucky, Lexington.

Stanchion Barn

Advantages

1. The entire herd is displayed at the same time.
2. Minimum amount of bedding is required.
3. Minimum housing area is required since each cow has a stall.
4. Working conditions are warmer for herdsman.
5. Injury from horns is reduced while cattle are in the barn since each animal is confined to an individual stall.
6. Boss cows are controlled *while in the barn*.
7. Cows off-feed, sick, or injured may be detected and treated more readily if confined in a limited area.
8. Work in cleaning barn is distributed throughout the year.

Disadvantages

1. More time and walking is required in chore work than in walk-through milking parlor arrangements.
2. Housing cost per cow is higher.
3. Housing is less flexible, requiring more expensive remodeling to shift to another livestock enterprise.
4. Manure is handled daily, requiring a storage pit, daily spreading, or loss of plant food nutrients in the manure.
5. More expensive equipment is required to conserve the liquid manure.
6. More stall area to clean and keep sanitary; chore work and expense increased.
7. Udder, hock, and feet injuries may be greater in the less comfortable resting quarters.
8. Preparing all cows for milking before starting the milking operation causes loss of stimuli effect on "let down" for much of the herd.
9. Squatting is necessary in washing udders, foremilk, machine stripping, and attaching and detaching the milking machine.

Abreast, Level-Stall, Walk-Through Milking Area and Loose Housing

Advantages

1. Labor requirements for dairy chores are less than for any other building arrangement studied. Milking machines are operated a larger proportion of the chore time. Less time is required to feed roughage when a "feeding-fence" is used in the pole barn.
2. Walking is kept at a minimum for chores.
3. Building costs per cow are less than other types of dairy barns. Walk-through milking area reduces amount of concrete area and number of stanchions used. Pole barn saves expense of flooring, heavy joists, and framing to support loft area.
4. High degree of flexibility is maintained for change in herd size. Increasing the herd is limited only by minimum-area requirement per cow. Decrease in herd size and utilization of unused area for storage or other livestock enterprises is not limited by stanchion stalls.
5. Injury to udders, hocks and feet may be reduced by loose housing which provides comfortable resting and roughage feeding quarters. (In remodeling old barns, one should provide for open housing to prevent too high humidity.)
6. Liquid manure absorbed by litter is conserved economically by use of sufficient litter, and manure is protected from leaching by being under a roof until the best time for spreading.
7. Less stall area to clean and keep sanitary daily; chore work and expense reduced.

Disadvantages

1. Additional bedding is required to properly bed the cows in loose housing.
2. Provision should be made to isolate "boss" cows from herd in the rest shed.
3. Milking area may need heat for comfortable working conditions in cold weather.
4. Entire herd is not displayed at once to advantage.
5. Crowding may occur in loose housing as the number of cows is not limited by stalls.
6. Squatting is necessary in washing udders, foremilk, machine stripping, and attaching and detaching milking machine.
7. More care required to detect cows off-feed, sick or injured, and less convenient to treat them than in stanchion barn.
8. Manure handling may cause a peak of labor when cleaning the rest-shed area.

Tandem, Elevated-Stall, Walk-Through Milking Area and Loose Housing

Advantages

1. Labor requirements for dairy chores are less than for other building arrangements studied except the abreast, level-stall type, milking area.
2. Walking is kept at a minimum.
3. Squatting is eliminated in washing udder, foremilking, machine stripping, and attaching and detaching the milking machine.
4. Elevated stall places udder at eye level for easier observation of injuries and care of udder.
5. Building costs per cow are less than other types of dairy barns except the abreast, level-stall type, milking area.
6. High degree of flexibility is maintained for change in herd size. Increasing the herd is limited only by minimum area requirement per cow. Decrease in herd size and utilization of unused area for storage and other livestock enterprises is not limited by stanchion stalls.
7. Injury to udders, hocks and feet may be reduced by loose housing, which provides comfortable resting and roughage-feeding quarters. (In remodeling, one should provide for open housing to prevent too high humidity.)
8. Liquid manure absorbed by bedding is conserved economically by use of sufficient litter, and manure is protected from leaching by being under a roof until best time for spreading.
9. Less stall area to clean and keep sanitary; reduces chore work and expense.

Disadvantages

1. Additional bedding is required to properly bed cows in loose housing.
2. Provision should be made to isolate "boss" cows from herd in loose housing.
3. Milking area needs heat for comfortable conditions in cold weather.
4. Entire herd is not displayed at the same time to advantage.
5. Crowding may occur in loose housing because number of cows is not limited by stalls.
6. Difficult to get around cow in tandem stall to clean dirty cow. For large herd, a separate area for preliminary cleaning may be provided.
7. More care required to detect cows off-feed, sick or injured and less convenient to treat them than in stanchion barn.

Walk-in - Back-out Milking Area and Loose Housing

Advantages

1. High degree of flexibility is maintained for change in herd size. Increasing the herd is limited only by minimum area requirement per cow. Decrease in herd size and utilization of unused area for storage or other livestock enterprises is not limited by stanchion stalls.
2. Injury to udders, hocks and feet may be reduced by loose housing which provides comfortable resting and roughage feeding quarters. (In remodeling, one should provide for open housing to prevent too high humidity.)
3. Less area to clean and keep sanitary for milking; reduces chore work and expenses.
4. Building cost is reduced when milking area is provided for part of the herd at a time.
5. Liquid manure absorbed by the litter is conserved economically by use of sufficient bedding, and manure is protected from leaching by being under a roof until the best time for spreading.

Disadvantages

1. More labor is required to do daily chores than in the stanchion barn.
2. Provision should be made to isolate "boss" cows from herd in loose housing.
3. More walking is required to do daily chores than in walk-through milking parlors.
4. Milking area needs heat for comfortable working conditions in cold weather.
5. Entire herd is not displayed for best appearance at the same time.
6. Crowding may occur in loose housing because the number of cows is not limited by stalls.
7. Operating time for milking machines is lost as milking is stopped when cows are turned out and others are turned in.
8. Squatting is necessary in washing udders, foremilk, machine stripping, and attaching and detaching milking machine.
9. More care required to detect cows off-feed, sick, or injured, and less convenient to treat them than in stanchion barn.

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Lexington, Kentucky
June, 1953

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