

ventilation in the stable, and it is well lighted with at least three square feet of glass per cow. Sunlight is a great microbe killer, and is the enemy of tuberculosis. The next essential is a clean stable. Modern stables are more easily cleaned than those erected a generation ago. They should have easily cleaned floors, and as few places to gather dust as possible. With a clean stable there should be a clean animal, but grooming is also necessary to keep the cow clean and healthy. No other animals should be kept in the same stable with the cows, as offensive smells will arise which will effect the flavor of the milk. Newly drawn milk, in open pails, readily absorbs all foreign odors, and heavy feeding of strong smelling stuffs, immediately before milking, especially should the stable be warm or badly ventilated, is responsible for many complaints of off-flavored or gassy milk. The stable should be well ventilated before milking if a clean, delicate-flavored milk is desired, as no amount of filtering or straining will ever make a contaminated supply quite the same as one which has been clean from the very first. The milkers should be scrupulously clean, bodily and in dress, there is no excuse for dirt on hands or nails. Clean water, a brush and towel, with soap and a little energy will remove that.

The milking utensils should be faultless in construction, easily cleaned, and of good metal. On no account use deep-seamed, old or rusty pails, and use only the small-mouthed pails. The cow's udder should be wiped with a damp cloth just before milking. The milking should be done quickly and with dry hands. The milk should be removed to the dairy as soon as drawn from the cow, strained and cooled as quickly as possible to 50 degrees, and put in the vessels for transportation, and kept in a cool place. It is safer to seal the cans so that the milk cannot be tampered with while in transit on wagon or car.

Between the producer and the city dealer there is a factor sometimes lost sight of,—the railway companies. Their arrangements for the care of milk at stations and in transit are far from adequate that such a valuable food product deserves. Milk is brought in late in the day, and empties are frequently one or more days on the return journey. They never forget to make the farmer do his part of the work, in loading or any other possible way. Many of the employees of the companies and others seem to think it their duty to sample cans of milk passing through their hands, thus infecting milk that was originally clean. The producer may have all the foregoing worked out to a successful completion, and yet miserably fail as regards profit, if he has not a good business herd of cows. Clean milk and big prices are all very well, and sound like profit making, but if each individual cow in the herd does not give a large and steady flow of milk, at a minimum cost of feed, the profits are not what they should be. The day of the four or five-thousand-pound cow is gone, for the successful milk producer. His herd must be composed of cows having a capacity of not less than seven to ten thousand pounds of milk per year. Not more cows but better cows would enable the milk producer to better meet present day regulations and conditions. This is the pivot on which turns the wheel of success for the producer of milk for city consumption.

Huntingdon, Que.

W. F. STEPHEN.

The Sire's Place in the Dairy Herd.

Editor "The Farmer's Advocate":

That the sire is "half the herd" is probably the most quoted statement in dairy literature. Few people realize the full truth of this statement, still fewer fully realize the money difference between two sires, one of doubtful quality, and one bred from a milking family, and more particularly from a dam with a known record for high production.

Most dairymen who have large herds of milk cows know the value only too well. They even go so far as to keep a herd bull until some of his offspring are producing milk and butter fat, and measure him by his offspring. This is the final test, and were it not for the time and expense required it would be a satisfactory method of judging a male to get high producers. The fact that breeders do not find more ready sale for aged bulls of proven value, is one of the regrettable features in the country-wide movement for improvement.

Let us see what the average breeder does. When he has to pay from \$100 to \$200 or more for a good bull he looks at the difference and uses the cheaper bull. Many of the poorly-informed dairymen even go to the extent of using a scrub bull because they cannot see the dollar lying quite close behind the penny. If we buy a bull for \$75 the interest for three years at six per cent. would be \$13.50. We sell him for bull beef and get perhaps \$100 if he has size and is in good flesh. This would be a gain of \$11.50.

Suppose we have the choice of buying a pure-bred Jersey, Guernsey, Holstein, Ayrshire, or other dairy-bred animal for \$400. He comes from, say, a dam giving 400 pounds of butter fat. The interest for three years at six

per cent. would be \$54. He will be worth \$100 to sell to the butcher. There would be a loss of \$354.

But is that all? Does not that measure the difference? Well, most readers would say it did not, yet few realize fully the significant facts behind the two animals. The first animal will probably produce heifers as good as the dams, perhaps a trifle better, perhaps a trifle inferior. What will the higher priced sire do? For the sake of argument it is quite within the bounds of reason that with the average herd of milk cows he will increase the yield of milk of his offspring two pounds night and morning. Not much you say. No, but it is enough. It would be four pounds daily. This would mean for 325 days milking period 1,300 pounds of milk. Thirteen hundred pounds of milk testing four per cent. would mean 52 pounds of butter fat. At 25 cents a pound would mean \$13. Thirteen dollars would measure in money one year's increased production in daughter over dam. If kept for eight years it would amount to \$104.

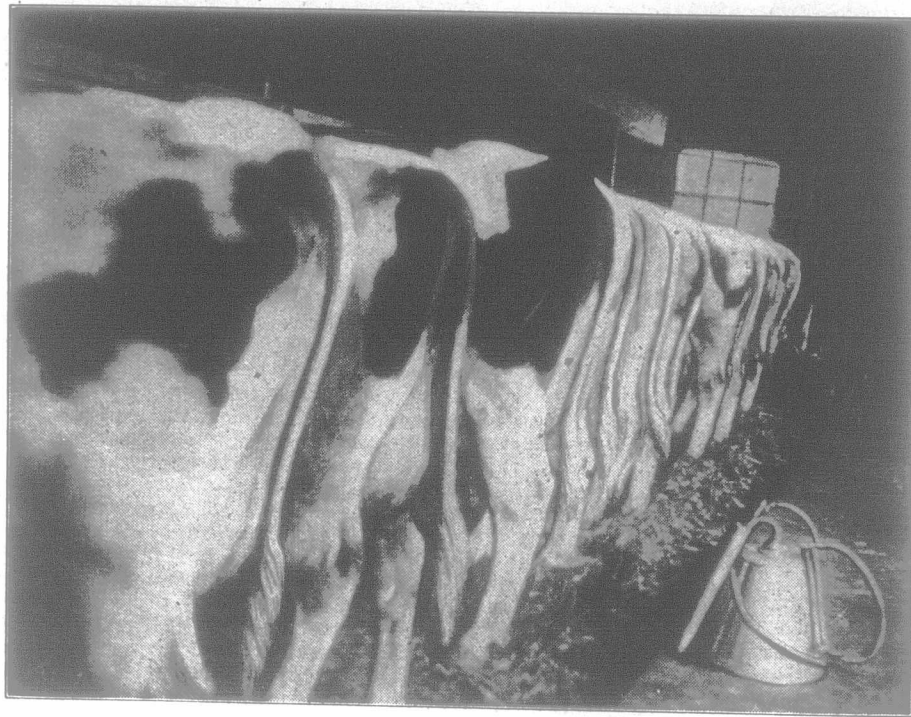


Home of a Middlesex Co. Dairyman.

Residence of John Dawes.

Suppose the bull was used on a herd of twenty cows, the law of chance would mean ten females yearly, and the three-year use of the sire would mean about thirty heifers. Multiplying the increased money value from one heifer, we have the startling figures of \$3,120. From this we subtract the difference between the interest and depreciation charges of the two animals, and we still have the total of \$2,754, as the money difference in the production of the two sires, the dollars behind the penny.

It is possible to use the sire with sixty females in place of twenty. This would mean a grand total of \$8,263.50, and this does not take



A Fine Row of Cows.

Cross-bred Holstein cows in the herd of John Dawes, Middlesex Co., Ont., and a unit of the milking outfit which milks them.

into consideration the effect in increased production in the grand-daughters and future generations. But that is not all. The sire has just as many possibilities in decreasing the value of the progeny of a herd. Suppose you have a herd of high-producing cows and you use a sire, which through his blood decreases the production two pounds night and morning, he has just as much chance of losing you the same amount. The sire makes or mars a herd. Figures, you say. Yes they are figures. There are a lot of things not taken into account, but there can be

no reasonable doubt as to the greater final money value of the high-priced animal. If he is the right sort and produces the right progeny at the end of the three years service, he ought to be worth just twice his purchasing price to someone who can measure value.

In this connection it might as well be made plain to the breeders of pure-bred dairy stock that the buyer is being fast educated up to the point where he will not buy a sire unless the seller can show him in black and white the record of the dam. Neither is the buyer going to be long suited with seven-day records and short tests, but will demand the yearly record of all near related females.

Minn.

JOHN BOWER.

The Milking Machine in the Dairy Stable.

Perhaps no invention intended to aid the dairy farmer in his operations is more important and more before the agricultural public, at the present time, than the milking machine. Labor grows scarcer year after year on the farm, and the demand for dairy products increases. Dairy farming necessitates considerable manual work, and the problem has been to get some suitable machine which will draw the milk from the cows' udders with no injury to the cows and with least possible inconvenience to the operator. Several machines have been or are now being perfected, and some of them are giving, according to men in whose herds they are operating, excellent results.

A few days ago we had the privilege of visiting an up-to-date dairy farm where a milking machine is installed, and milks the cows night and morning. John Dawes, of Middlesex County, Ont., is the owner of one hundred acres of excellent farm land, and of a herd of upwards of twenty cross-bred Holstein and Shorthorn cattle, of which any one might be proud. Up to a short time ago he was forced to milk the cows, then twelve in number, by hand. Having on his premises a four H. P. gasoline engine for grinding he foresaw that by installing a milking machine, if it could be made a success, he would be able to increase his herd and manage the larger number of cows with less labor than was then re-

quired for the dozen milkers. Accordingly a machine was installed, and a small gasoline engine of one and one-half H. P. Three units and an extra pail were purchased, making it possible to milk three cows at a time; or if more units were required, as the machine places the load on the engine with an alternating back and forth stroke six cows could easily be milked at once with this small engine. With the three units now used it would be possible for one man to milk twenty-five cows per hour. The cost of gasoline to run the small engine an hour is only three cents, which is very low. So far the machine has been, as considered by the owner, a success. Up to the present no stripping after the machine has been required, a little the outfit making it possible to draw off almost the last drop from the cows. It has been operating a little over two months and a half, and no repairs or expense have been necessary so far. No sore teats or swelling of the udders has been caused by the machine, and the cows stand contentedly chewing their cud while having the milk extracted. So far no difficulty has been experienced in keeping the machine clean as it is simple in construction, and in operation the dairyman has very little to look after with