

Mechanical Appliances for the Dairy Farm

A. M. Zoeller Uses a Tractor, Milking Machines, Gasoline Engines to Reduce Man and Horse Labor

TO the mechanically inclined, an hour or so on the farm of Mr. A. M. Zoeller would be full of interest. Mr. Zoeller is working 300 acres of rich, clay loam soil, just a couple of miles from the village of New Hamburg in Waterloo county. The whole of this big farm is devoted almost exclusively to dairying, the crops produced on it, and almost every acre is under the plow, are designed for the feeding of the dairy herd or the hogs which are the principal side line. All roughages are converted into a finished article. Such a system of farming calls for a maximum amount of labor, always the scarcest commodity on dairy farms. Mr. Zoeller has had the usual difficulty in securing men, and is endeavoring, so far as possible, to substitute machinery for man and horse-power, and in doing this he has progressed in mechanical lines considerably further than most others who are trying to solve the farm labor problem in the same way.



The Zoeller Homestead.

The tractor has been an important factor in the working of this farm since the fall of 1915. Few farmers will forget the wet, late harvest of that year. Mr. Zoeller found himself with an immense amount of fall plowing to do, but with his horses worn out by the heavy work of the muddy harvest. He invested in an 8-hp tractor, and a gang plow with 14-inch bottoms. It did not take him long to discover that 14-inch bottoms were not adapted to heavy clay soil, but when fitted with 10-inch bottoms, his tractor outfit did excellent service in fall plowing, plowing three furrows under favorable conditions or just two in real hard work. With this outfit Mr. Zoeller has plowed as much as eight acres a day. Last spring horses were used only on the grain drill in putting in the crops, and in the working of the 300-acre farm the tractor has made it possible to dispense with two teams.

Tractor for Bett Work.

The usefulness of the tractor is not limited to field work. As a part of his farm equipment Mr. Zoeller has a threshing machine, a chopping mill and an ensilage blower. All of this expensive equipment is operated by the tractor which delivers 15 h-p on the belt. Just how useful is this phase of the tractor's work, in connection with the silo capacity on the farm. In connection with the two sets of buildings are two big cement silos, 15 x 45 feet and 12 x 45 feet. Supplementing these are two stave silos 14 x 25 and 12 x 25 feet. Altogether 50 acres of corn are grown and ensiled with the help available on the farm.

The dairy herd consists of the original 100 acres, with such a herd as this, milking becomes the biggest and most difficult problem of all. Mr. Zoeller solved it four years ago, when he purchased a milking machine with six units for the larger herd. Since then he has purchased a second outfit for the smaller herd, which speaks well for the satisfactory service given by the first machine. "One man does the milking and another the stripping. We can milk 35 cows in one and a quarter hours," remarked Mr. Zoeller, "and if we are real busy one man can do the work alone."

A five h-p. gasoline engine operates the larger milking machine. It also runs a dynamo from which the buildings are lighted, separates the milk, sulps roots, pumps water, and so forth. In connection with the dynamo there is no storage battery. "But," said Mr. Zoeller, "it is cheaper to run the engine during cherry time than to keep up a half a dozen lanterns. The dynamo has now been running two to five hours daily for five or six years, and it ran for four years without one cent of expense."

On the smaller farm there are two engines, both two h-p. gasoline, designed to pump water and run the milking machine.

Limburger Cheese a Farm Product.

The milk from this big dairy herd, and some purchased from neighbors, is manufactured into cheese right on the farm. Years ago Mr. Zoeller's father recognized that a market might be developed in Canada for Limburger and other fancy cheeses. The small cheese factory, which he erected, has every convenience for manufacture with a good curing cellar underneath. Fancy cheese only are made, and the market is continually growing. Mr. Zoeller assured me that he finds the manufacture of these cheese decidedly more profitable than it would be to send his milk to the neighboring factory to be made into Canadian cheddars. The market for the fancy varieties is found in Kitchener, Toronto, Hamilton

and several other Ontario cities. Another advantage of the farm factory that Mr. Zoeller did not forget to mention is that the whey is available when still sweet and good for feeding the calves and hogs. Of the latter, about 100 are usually on hand.

The buildings on the Zoeller farm are useful, but most of them differ from those of the old buildings in the country. They are well painted, and in the painting of them Mr. Zoeller followed a plan that is capable of wide application where old and open siding is being painted for the first time. It is done directly to the lined oil mill and purchased the settings of the oil tanks. These settings are much heavier and thicker than the regular paint oil, and when mixed with medium capacity and more durability than where a thinner oil is used.

"We first had the 100-acre farm," Mr. Zoeller told me as we drove to the station. "We found such a demand for pure bred Holstein cattle that we bought the 200 acres across the road five years ago, primarily to further develop the Holstein business. The herd to stock he was using the natural increase of our pure bred Holsteins, the development of which from now on will be the main feature of our work."

Figuring Cost of Production

The Importance of Considering Depreciation
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I HAVE just been reading some of the literature distributed by our various Governments. In one bulletin I have found something really good on methods of figuring the cost of production of farm products. The writers teach briefly but convincingly on one point that practically every farmer ignores in balancing his year's accounts. The paragraph is as follows:

"Define knowledge as to the legitimate charges which enter into the cost of production, handling and marketing is an absolute essential to success and permanency in business. Some of these charges, for a time, as, for example, depreciation. The judgment awaits his eyes to them, but the day of enterprise has been wrecked because of failure to take all the expense items into account. Accurate system of cost accounting in business enterprises are now required by law in several States, in order to protect the interests of investors. Of course, in the restricted sense, the individual dairyman does not have to protect any one but himself, yet in his own interests he ought to know what it costs him to do business."

We have a case in mind that illustrates the contention. Some years ago a young man bought a farm in Ontario county. The buildings were in good shape, and for the next few years young fellow made a good living and paid all his honest debts, including the interest on a rather large mortgage.

He thought he was doing fairly well. He was meeting interest payments without difficulty, so the size of the mortgage did not worry him. As he was not possessed of more ambition than the average man he had no incentive to make a more intelligent study of his business, or a greater expenditure of energy. He was just drifting.

Suddenly he woke up to discover that every building on the place would have to be re-shingled at a cost of several hundred dollars. Some of his machines were wearing out. All along he had been considering that he was making end meet. All along his buildings had been depreciating, but he had made no provision for their

repair. This depreciation, he came to see, was an annual charge against the farm, and when he had not made provision for it, he had not really been plugging further into debt to make good this depreciation. It did have the one good effect, however, of stimulating him to greater exertion.

It is a failure to calculate items such as this that explains in part why farmers have for scores of years been willing to sell their produce for less than cost of production. Few of us knew what was the cost of production. When we wrote our little money we made out of the farm press, for instance, the amount of roughage eaten, the amount of grain, perhaps a veterinary charge, and then subtracted profits. We never mentioned anything about depreciation in the buildings, in the cow house, interest not protested when our agricultural colleges have calculated profits in the same way. On the whole, legislators a bad education. They have been accused to get farm produce cheaply, and they think getting it cheaply is more cheaply. They are still stiles of life. It seems to me that it is up to us to keep our accounts in a business way and start right away to re-educate the public.

Purchasing the Herd Sire

The Views of Prof. C. Larsen

THE purchaser of the purebred sire to head a reasonable scrub herd should be willing to pay 10 or 15 grade cows. If a man owns a herd of kind of a sire is not a paying investment. Such a sire may easily sire 30 daughters during the three years in the herd and each one may produce 50 This increased production would amount to 1,500 pounds of butterfat per year and this butterfat is worth about \$600.

These daughters should make this increased production for at least eight years. The total value of our scrub dams would then be \$4,500. A hundred herd head or less is not the big question when can I reasonably expect this herd bull to transmit large production to his offspring?

These inherited qualities are not visible. The average buyer usually pays for what he can see. This is often where the mistake is made. The invisible qualities, viz., large milk and butterfat production, which are hereditary, are the valuable ones. They should be combined with good type. I paid \$100 for what I could see and what I figured that for what I could not see and what I could not handle.

It is often advisable to purchase an aged and tried sire in preference to a young and untried one. A large producing daughters of excellent type is a sure investment.

One pint of formalin is sufficient to treat from 50 to 40 bushels of grain for rust, and from 40 to 45 bushels of potatoes for scab.



A Brown Swiss Cow with a Creditable Record. Iowa, owned in one of the best herds in New York State, has an official record of 16,844 lbs. of milk and 424 lbs. of butter in a five-year record. Her sire, Tom Bull, has an official record of 15,863 lbs. The breed is remarkable by its adaptability as a dual purpose character with a strong leaning to the dairy end.