Automobiles, Farm Machinery and Farm Motors.

The Fair and the Motor.

The fall fairs are proving a valuable educational medium in more respects than one. Perhaps the biggest recognition they have given to any industry of recent development, has been accorded to the automobile trade. This compliment is based upon two convictions—one, that the automobile has passed the pleasure stage and the realm of restricted popularity, and the other that the agriculturist of the future cannot talk about a well-equipped farmstead unless his inventory shows a serviceable car of some standard make. It has well repaid the motor owner to visit a large exhibition, because under the most favorable circumstances he can acquaint himself with those problems of mechanical construction which have always created the greatest wonderment. For instance, the visitor sees the internal intricacies of a motor exposed in such a shape that the oiling of the cars does not prevent an accurate conception of its functions. At the Toronto Fair, several manufacturers cut away the housing of the differential in order that spectators might witness the workings of the little ring gear, the big ring gear, and the central movable gears, which allow the back wheels to receive power in inverse ratio to the amount of resistance; in other words, the value of the differential which allows one wheel to go slower than another around a corner, was exemplified so clearly that anyone could carry away an accurate idea. Other manufacturers cut out a part of a cylinder head, and by operating the engine with electricity they revealed the system by which valves and pistons developed power through the combustion of gas. Clutches were also shown and the agriculturist took away with him more information, regarding multiple disks and cone types than he had been able to gather from reams of literature. If cars are exhibited this fall at any point in close proximity to your home, we would strongly recommend your attending the fair in question. Before doing so, it would be well to review your season's running and to jot down a memoranda of any mistakes you have made, and also a note or two regarding difficulties that arose under various circumstances. You will find the salesmen and expert mechanics willing and ready at all times to answer questions.

There are not many mechanical changes in the 1917 models. Some of the larger cars have adopted the two-unit system of ignition, starting and lighting. This idea is mainly attributed to the fact that a motor, separate from the generator, presents possibilities where machines of heavy horse power are used. Practically only one car is devoid of a self starter, but this model possesses other outstanding features that seem to compensate for the absence of one convenience. Electric-light systems are universal. Gas tanks are being moved to the rear in many designs, that previously housed them under the cowl or front seat. The closed bodies also show some interesting changes of minor importance. The door by the wheel, locks from the inside and the opposite door, from the outside. Dome lights give a dull radiance of extreme beauty. Slip covers are being used in exquisite taste. Tire covers will soon be extremely common, for they not only add to the the beauty of the automobile but protect the rubber from extreme changes of temperature, and particularly from the heat of the sun. Interior seat arrangements in touring cars and roadsters show a number of innovations. The clover leaf design has become popular. Some autos have divided front seats, and the seven passenger models have the auxiliary seats attached in such a shape, that when not in use, they do not look cumbersome or out of place. 1917 will not see a car with a body of rough, angular shape. The stream-line effect, even in the lowest-priced models, has come to stay. Of course, very expensive autos still expose the warning signal, door hinges, or odd accessories, but speaking generally, the trend is distinctly and decidedly towards smooth construction. The visitor at the fair will also notice that cellular radiators are winning unusual favor, that the flat fenders are a thing of the past and that easily manipulated tops have come to remain forever.

When the automobile was first introduced owners used it on fine summer days only, later on they gradually extended the field of its influence to all kinds of mid-year weather. Then there was a demand for side curtains, that would so inclose it that the early days of spring and the late days of fall might be included. Now the closed body has been introduced, and in practically every instance it is free of squeaks and rattles so that without inconvenience or annoyance, the motor car has become an all-season machine.

AUTO.

THE DAIRY.

Cream Cooling.

Necessary Features of Satisfactory Cream-Cooling Tanks.

The prime purpose of the cooling tank is to provide suitable, practical and convenient facilities whereby the cream may be set in cool water. Water is the cheapest, simplest and most efficient cooling medium available on the average farm.

SIZE OF TANK.—Since the cream of several separations is kept on the farm, the cooling tank should be of sufficient size to accommodate at least two cans, one to be used for the freshly separated, warm cream, and the other for the cooled cream of previous separations. This eliminates the mixing of warm cream with cold cream, which is a practice which cannot be too strongly condemned, as cream so mixed will ferment very rapidly, causing an inferior product. The tank should be deep enough so that the water on the outside of the cans at all times reaches the level of the cream on the inside of the can.

INSULATION.—The cream cooling tank is of value not only in the prompt cooling of the warm cream, but it makes possible also to keep the cream cool until it leaves the farm in summer and to prevent its freezing in winter. Its efficiency therefore is greatly enhanced by proper insulation, although a non-insulated tank is a great deal better than none. The lining of the tank with special insulating material such as corkboard, hair, felt, etc., adds greatly to the insulating efficiency of ordinary tanks. It has been experimentally demonstrated, however, by G. L. McKay and F. W. Bouska of the American Association of Creamery Butter Manufacturers, that a tank made from two-inch cypress boards is practically equivalent in insulating efficiency to a one-inch corkboard, and answers therefore all practical purposes.

Unless the cream cooling tank can be installed in a clean room, protected from extremes of heat and cold and reserved for the storing of cream exclusively, it is essential that it be equipped with a tight-fitting cover. This will add to its efficiency in controlling the temperature and it will protect the cream against contamination with diverse impurities and odors.

FACILITIES TO CHANGE WATER.—The cooling water even in the most perfectly insulated cooling tank will warm up some during the storage of the cream, partly because of the atmospheric heat in summer and partly because it absorbs the heat from the warm, fresh cream. It is therefore important to change this water as often as may be necessary in order to keep the cream reasonably cool at all times. In properly constructed cooling tanks a change of water once or twice in twelve hours is usually sufficient. The cooling tank should therefore have a drain that will facilitate the prompt removal of the warm water, while the fresh, cool water runs in. Time, labor and water may be economized if this drain is connected with the stock watering trough used on the farm; thus the cooling water, after it has served its purpose in cooling the cream is run into the stock trough, where it automatically takes care of the water supply of the stock. Inasmuch as the stock is watered at least twice in twenty-four hours, the changing of the water in the cooling tank every twelve hours calls for no labor additional to that required anyway for the watering of the stock. If running water is available, or the water is pumped into an elevated tank, as is the case on many farms with wells and windmills or gasoline engines, the changing of the water in the cooling tank is further simplified by connecting the intake of the cooling tank with the water supply pipe from the water storage tank.

Spring and Well Water.

On farms with running springs the cooling and storage of cream may be readily solved by setting the cream cans direct into the spring. In order to guard against the tipping of the cans, especially those only partly filled, and to insure proper immersion of the cans so that the level of the water surrounding the cans is at least as high as that of the cream in the cans, an ordinary box or barrel may be set into the spring to accommodate the cans. In this case the spring water is allowed to continuously run through the box and to overflow at the proper level.

Dug wells with cold water may also serve as natural cooling and storing places for cream. The cans may readily be lowered into such wells by a windlass or on ropes with pulleys. Dry wells and pits, although cool, are usually not suitable for storing the cream. As previously stated, the mere exposure of the cream to cool air does not cool the cream rapidly enough to prevent fermentations. Then, again, such pits are usually damp and are prone to contain stale air, and often foul odors and gases, which may be absorbed by the cream, and which are favorable for contamination with and growth of molds and other undesirable microorganisms. Dry wells and pits are very similar in their effect on cream as cellars. Their chilly atmosphere is due to dampness rather than to low temperature, and their standard of sanitation is at best questionable. Running springs and dug wells with cold water on the other hand furnish ideal places for cooling and storing cream. These natural facilities are available on many farms, but are often not utilized. If intelligently used, these facilities may serve the purpose at practically no expense to the farmer, quite as effectively as especially constructed cooling tanks.

What Experiments Prove.

1. Quality is the fundamental factor that controls the condition of the butter market and that determines the price at which butter sells.

2. The quality of butter on the market depends more on the quality of the cream from which it is made than on any other condition incident to production, manufacture and transportation of the butter.

3. In order that the cream may arrive at the creamery in good condition, it must be cooled promptly and be kept cool until it leaves the farm.

4. Running springs and cold water wells serve as efficient natural facilities for cooling cream on the farm.

5. In the absence of these natural facilities, properly constructed cream cooling tanks should be used. These may readily be constructed by the cream producers or can be purchased ready-made and at low cost.

6. By pumping all water used for watering the stock through the cream cooling tank, the use of the cooling tank involves practically no extra labor.

7. The proper use of the cream cooling tank and keeping separate the warm cream from the cold cream retards the souring of the cream, checks undesirable fermentations, eliminates the animal heat from the cream and protects it from contamination with dust, foul odors, flies and other impurities.

8. In order to secure the best results from the use of the cooling tank, all utensils, cans, separators, strainers, stirrers, dippers, and the tank itself should be kept thoroughly clean.

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HORTICULTURE.

A Light Fruit Crop.

Since last report of the Department of Agriculture Fruit Branch was published, there have been some changes in the apple situation. Considerable fruit has fallen in many parts of Ontario, due to prolonged dry weather. This has been particularly noticeable in the Georgian Bay district, where a fair crop had been expected. Much of the fruit there will be of small size, and only about 20 per cent. of No. 1 quality. Elsewhere in Ontario the dry weather did not seriously affect the apple crop, which had already been very seriously reduced by heavy dropping and apple scab.

The general situation in Western and Northern Ontario can be obtained from the following table:—

Norfolk County—60 per cent. of standard crop and 15 per cent. No. 1.

Georgian Bay—60 per cent. of standard crop and 20 per cent. No. 1.

Burlington—40 per cent. of standard crop and 15 per cent. No. 1.

Niagara District—40 per cent. of standard crop and 15 per cent. No. 1.

Lambton District—45 per cent. of standard crop and 10 per cent. No. 1.

Western Ontario (inland)—50 per cent. of standard crop and 10 per cent. No. 1.

East of Toronto there will not be more than 20 per cent. of No. 1 fruit, and the crop is very light.

Reports from the Annapolis valley remain favorable. The fruit is generally clean, and there will be a fair crop.

A falling off in prospects is reported from British Columbia, and the crop will be slightly less than in 1915.

Peaches are estimated at from 50 to 60 per cent. of a normal crop.

The plum crop is reported light, as is also the pear crop.

There will be a medium to full crop of grapes.

Fall Selection of Potatoes Pays.

It pays to select next year's seed potato tubers from the field at digging time, better than to select them from the bin next spring. Here are reasons why seed selection is more easily taken care of now than when the potatoes are in the bin:

At digging time one can get a good idea as to the type and uniformity of tubers produced under individual vines which cannot be obtained after the crop has been put in storage. Seed should be selected only from vines producing several uniform, average-sized, true-to-type tubers. Such selection can not be practiced when the seed is selected out of the bin.

Tubers affected with scab, russet scab, late blight rot, black leg rot and brown ring discoloration due to wilt should be discarded. To avoid the possibility of getting tubers infected with black leg rot or brown ring discoloration, the field should be thoroughly inspected before the vines have dried up. Seed should not be kept from infected plants; in fact, wilted plants, together with what tubers have been formed on them, ought to be destroyed.

Plants affected with leaf roll, curly dwarf and mosaic should be destroyed and no tubers saved from them. Although these diseases do not cause any visible injury on the tubers, the use of infected seed will reduce the yield and finally cause the potatoes to "run out."

—A. G. TOLAAS, University Farm, St. Paul.