

The life of a horse is figured at about 10,000 working hours, but his maintenance is several times that. The working life of the tractor is at least twice as many hours, and its maintenance ceases when its work is done. The first cost is not so great as that of the horses it displaces.

Whether working or idle, the horse requires food, attention and shelter. All the idle engine wants is shelter—and work. This does not mean, however, that an engine should be kept idle. The man who makes his tractor pay the best is the one who manages to keep it busy the greatest proportion of the time.

The engine can be made an all-the-year-around servant, something that can be said of very few other farm machines. Besides plowing, harrowing and seeding, it hauls binders, hay and grain wagons both to the stack and to market, by almost a train load; threshes, grinds, and does all the work a stationary engine can do, digs ditches, grades roads, rolls meadows and grain fields, and hauls heavy loads of any kind. If the ordinary wagon load is to be conveyed, the tractor will do it. If some unusual work is to be done, such as the moving of a building, the tractor is ready with the power, and if, in the midst of its various tasks, night overtakes it, the headlight turns night into day ahead of it and guides it along. Twenty-four hour stunts are not rare in operating a tractor during the busy season.

The tractor, too, will take up its work at full capacity after a season of idleness without any coaxing or favoring while its muscles are being hardened. It is never out of condition.

One acre in five under cultivation is required to produce the food for the horses that supply the power to work the rest. The tractor consumes nothing that could be made into food for the human family in any more direct way than through the tractor.

"There is no question," says a modern agricultural writer, "but that the crops on many farms might be doubled if a proper seed bed were prepared and proper cultivation given; but on account of having a large acreage the work is hurriedly done; consequently only half a crop is realized. One of the advantages of the small farm is that it is possible to do things in the proper way and at the proper time for growing a maximum crop." Profitable farming is now a power and implement problem. Power combines the intensive culture

sent time is expended in plowing; the shallow plowing method now so generally in vogue. For permanent culture deeper plowing is needed — and the farm world is power-short now. Horses increased fifty per cent. in numbers in the past ten years, and one hundred and forty-three per cent. in price. The supply has not nearly kept step with the demand. Neither are horses able to adapt themselves so fully as the tractor to the wide range of utility represented between the slack and busy season on the farm. The horse force must be kept on an average 9,000 hours for every 1,000 hours of full service. Animals cannot respond quickly enough to the increased demands of the rush seasons unless they are kept in numbers which at most seasons of the year are entirely excessive. The tractor can

also makes it possible to avoid bad conditions by rushing the work through when weather and ground are the most favorable.

Because there are tractors now plowing and seeding a fair sized farm complete between sunrise and sunset we are apt to forget its importance on the small farm; indeed, until quite recently the manufacturers have so far overlooked it that there was not a single small farm tractor excepting those home-made affairs constructed out of old binder and mowing machine wheels. The success of these, and the demand for something of a more finished and uniform design, has forced the factories to take the matter up, and several of the late designs are intended (as some of them succeed in doing) to cater to the wants of the small farm. This demand has

been more difficult to meet than that for the large farm, for the big tractor, working in large areas where there is ample room to turn, can be rigged with trailers, and its work may be of a more restricted nature, and still be profitable.

The small tractor must be furnished at a cost in keeping with the other equipments of the place. It must contain within itself a place for attaching and operating four

to five plows, and it ought to be so constructed that it will thoroughly pulverize, roll and seed the strip it covers in one operation.

The seeding done, the tractor should be readily stripped of its tilling attachments and converted into a common power truck or general farm wagon, made so nearly a part of the load it conveys as to derive a part of its tractive force from the weight it



Today our Western Canadian Prairies are dotted with scenes similar to this.

possible on the small farm with the economical management of the large one. In actual experiment in a gain of two hundred per cent, which was made in the productiveness of a certain area, one hundred per cent was found to be due to better plowing and harrowing, fifty per cent to better cultivation, and the rest to better seed.

Sixty per cent of the power used in raising wheat at the pre-

vious time was expended in plowing; the shallow plowing method now so generally in vogue. For permanent culture deeper plowing is needed — and the farm world is power-short now. Horses increased fifty per cent. in numbers in the past ten years, and one hundred and forty-three per cent. in price. The supply has not nearly kept step with the demand. Neither are horses able to adapt themselves so fully as the tractor to the wide range of utility represented between the slack and busy season on the farm. The horse force must be kept on an average 9,000 hours for every 1,000 hours of full service. Animals cannot respond quickly enough to the increased demands of the rush seasons unless they are kept in numbers which at most seasons of the year are entirely excessive. The tractor can

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\* "Pulling" a 40-horse load — Double-discing 125 acres daily.