



THE TRACTOR

shown that horse power requires expensive buildings, that on the average it works only three hours a day, that the feed used to maintain horses could be used to much better advantage with cattle or sheep, but I have criticized horse power enough to impress this points that we should study how to reduce its cost. If we realize that it actually costs about \$200 worth of marketable material to keep a team and that material could be converted into meat or milk and sold for more money then we may expect to make a more economical use of our horses.

#### The Case Against the Tractor

Now for the indictment of the tractor. Every horse breeder, no doubt, can make that. From what has been said about horses, one may gather that certain objections cannot be offered against tractors; namely, that the units are small; that they waste so much energy; that they have to be fed when idle etc., but the size of the unit means that there must be a big first investment, one cannot buy the horse power of an engine in instalments; there must be a big cash payment before a fraction of horse power may be obtained and by the same token the slightest impairment of the unit means that the whole force must be idle. The tractor requires a man with special skill to operate it, it is not readily handled by the average farm hand or even farmer; it is made to run on firm ground under ideal conditions; it is easily put out of commission by vibration or concussion, and although rated to deliver a certain horse power at the draw bar, does not do so unless it is on firm ground.

When a horse gets on soft ground we excuse him from delivering power at the traces and let him get himself out; when the tractor gets into a similar position it digs itself in deeper and uses all its power to sink itself further into the ground. The tractor fails in handiness; it rapidly depreciates, it does not reproduce itself; its use upon the land tends to impair the mechanical condition of the soil and is very hurtful to roads; the necessary fuel supply has to be bought for cash and is very uncertain in price.

After examining the demerits of both animal and mechanical tractive power, it is plain that there is plenty of room for improvement. The fact should be borne in mind that tractive power is a big expense in farm operation; some authorities, notably the Minnesota Station, have figured it at 40 per cent. of the total cost of operating a farm. On small farms where a proportionately large number of horses are kept or a big tractor, it is higher; on farms where the acreage is large the proportion of horse power to work to be done or returns it is usually smaller.

As horse breeders, we should recognize this, that much of the argument for tractors lies in the fact of extravagant use of, or misuse of horses, in the fact that horse power expense is so often out of proportion to the work accomplished. This is due to a failure to appreciate the cost of keeping idle horse power, to a disinclination to put horses on an absolute business basis, to a general low average of efficiency in doing farm work with horses due to the horses lacking in ability to

do the work with 100 per cent efficiency, and to the driver being willing to do less than a full day's work after a full day's expense had been expended upon the horse power. When comparisons are made they are generally as between a thoroughly efficient tractor and horse power of average efficiency.

#### Local Conditions Must Determine

In our present state of indifferent use of horse power and disregard for the cost of it on the one hand and on the other the obvious deficiencies of mechanical traction, the choice of the power used must be determined by individual conditions rather than by the unquestioned advantages of one power or the other for all kinds of work. Very apparently there is a place for mechanical traction on many farms, but it is just as apparent that tractors cannot supercede horses as the universal farm motive force.

Perhaps the place the tractor should take is already conceded to it and possibly we expect more than it will be able to give. In one branch of farming operations mechanical traction easily has a superiority over animal, and that is for light road work. We have seen automobiles by sheer efficiency take the place of horses for pleasure driving and for passenger conveyance, and we have been ready to concede to mechanical traction the probability that it could as readily take the place of horse power at farm work. Perhaps it may. In some aspects of farm work it may be able to demonstrate its superiority as it has in speed upon the road and if that time ever comes we shall see a remarkable falling off in sentiment favorable to horses.

For the immediate future, however, horse breeders may keep their advantage by methods of farm management that will tend to keep down the cost of horse power and keep up its efficiency. Some of these methods are:

- a. A close relationship between the number of horses and the work to be done.
- b. An increase in horse efficiency by raising the standard of work horses and adapting machinery and work to the horse power available.
- c. A careful distribution of work throughout the year.
- d. The practise of economy in feeding and care.
- e. The keeping for farm work of the dual purpose animal, the brood mare.

When we practise these methods and so reduce horse power costs we shall have removed much of the weight of objection against animal traction, and it is to the advantage of every man who pretends to operate a farm to keep down power expenses. It may be good for horse breeders to see horse raising on the increase, but in the final analysis the only thing that helps horse breeding is the economical use of horse power, horse power efficiency. We owe much to the horse and we must not think we can discharge our obligations or render even justice by indulging in sentimental considerations. The horse, like most other things in this practical world, is best treated when he is given the opportunity to stand upon his merits.

#### Hopeless

"You say you have no references as a cook. How is that?"

"Well, you see, mum, I've always stayed in wain place until the people died."



AND THE HORSE