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## SHALL WE PLOW NARROW OR WIDE RIDGES?

*R. R. Graham, B.A., O.A.C., Guelph*

**A Scientific Article by One Who Has Been a Farmer and Now is Demonstrator in Physicial Science at the O. A. College, Guelph.—Everything in Favor of Underdrained Land Plowed in Wide Ridges.**

THE question has been raised as to what is the best width to make the ridges when plowing or rolling heavy clay land. I do not think that any very hard and fast rule can be put down for the guidance of farmers in this particular, as soils, seasons, crops and other circumstances vary so much throughout our country and have such a large influence in determining how we shall till to get the best results under any set of conditions. There are, however, a few facts that must be considered in an attempt to answer the question and chief among them is drainage; others are the yield, time and labor in plowing, seeding and harvesting periods.

DRAINAGE

A heavy clay soil, in fact any soil, is much more quickly and thoroughly drained by being plowed in narrow than in wide ridges, for there are more furrows or ditches for taking away the water, not only the run-off but the water within the soil for some distance on each side of the furrow and to a depth depending on the space between the furrows. A tile drain three feet deep in clay soil, the drains being 40 feet apart, will drain the soil to a depth of at least two feet at half way between the drains in 48 hours.

According to this, furrows nine inches deep and 12½ feet apart would drain a clay soil to a depth of six and three-quarter inches at the centre of the ridge if all the water were removed from the ridge for a depth of six to nine inches in the very bottom of the furrow or at a depth of nine inches. But this is very improbable for in the case of a very heavy rain and in the spring-time freshets the furrows may run half or altogether full. Assuming that they do run one-half full, which is a very fair estimation, the centre of the ridge would be drained only to the depth of about three and one-half inches in 48 hours.

Since 48 hours is the limit of the time allowed for the drainage of a soil after any ordinary fall of rain and since three and one-half inches is very close to the minimum depth to which a clay soil ought to drain within this time, it would seem that in heavy clay land the ridges should not be wider than 12½ feet for good surface drainage and so far as the drainage is concerned the farmer is on the safe side when he plows nine or 11 feet ridges.

But even with the narrowest ridges his soil is not thoroughly drained after all. He would get far better results, larger profits and have far more satisfaction if he would put in underdrains and then plow his land in wider ridges, probably 16½ feet or even 22 feet or more. The tendency at the present day among farmers in most parts of Ontario is to plow wider ridges than some of them, at least, were accustomed to plow a number of years ago. As underdrainage becomes more and more understood in this province the practice of narrow-ridged plowing will become less and less.

THE YIELD PER ACRE

A piece of land which is plowed in narrow ridges will not produce as much hay or grain per acre as it would if the ridges were wide, other things being equal, because the furrows take up considerable area in themselves and besides the crop is seldom, if ever, as good just near the furrows as towards the centre of the ridge because the furrows are usually the wettest portions of the surface and consequently the crops are frequently injured by too much moisture here. Assuming that the plants are not so thrifty near the furrows as on the centre of the ridges, and because they are on a lower level, they would naturally be injured by slight frosts during the period of their growth. I think that I am putting it within a safe limit when I say that there is a strip of land one foot wide wasted at the furrows on the average. For one square acre of land the following table gives the number of furrows, the loss of land and the loss in yield per acre for land plowed in ridges of various widths. The yield per acre is taken as 50 bushels for a basis of comparison.

| Width of Ridge Feet | No. of Furrows | Loss in Area per Acre | Loss in yield per Acre |
|---|---|---|---|
| 9 | 24 | .114 | 5.7 |
| 11 | 19 | .091 | 4.5 |
| 12 | 18 | .086 | 4.3 |
| 16½ | 13 | .062 | 3.1 |
| 18 | 12 | .057 | 2.8 |
| 22 | 10 | .047 | 2.8 |
| 30 | 7 | .033 | 1.6 |
| 40 | 6 | .029 | 1.4 |

This table is interesting because it shows that the loss in yield per acre is inversely as the width of the ridges, that is if the width of the ridges is doubled the loss in yield is reduced one-half and vice versa. If a farmer plowed his land in ridges 18 feet wide instead of nine feet wide and sowed it to wheat he would make practically $3.00 more per acre if the wheat sold for $1.00 a bushel and for other grains in proportion to their selling price. This amounts to three per cent. on his investment, valuing land at $100 an acre, as much as most farmers are drawing for their money in the savings department of their bank. If he used 40 feet ridges he would make about four and one-half per cent. and so on. This seems to me to be a strong point in favor of wide ridges.

TIME AND LABOR

These are two important factors that cannot be overlooked in relation to any farm operation and in this particular I consider they play a very important part, not only in relation to the actual plowing in the fall but also to the seed time and harvest. It requires more time and consequently more labor to plow land in narrow than in wide ridges because there is more staking, more of the slower and painstaking part of plowing, namely, marking out the ridges and finishing the furrows. I dare say we would be astonished if we knew how much more time it would require than if the ridges were made wide.

Then, furthermore, if the plowman is not a very skilled man he will be almost certain to leave the centre of the ridges higher than the edges and the narrower the ridges the greater this tendency. This will spoil the appearance of the plowed land and bring endless troubles later on. If the land becomes established in high ridges the labor of digging cross drains in the fall and shovelling them out after the seed has been shown in the spring is greater than if the land were flat on account of having to go deeper through the

**A Fair String of Ontario's Best Blood**

The illustration shows Mr. G. A. Brethen and daughter, and five bull calves raised by Mr. Brethen on his farm in Peterboro Co., Ont. Mr. Brethen's farm last year was awarded the first prize in the Special Good Farms Competition for the County, conducted by Farm and Dairy; he also won fourth prize for District No. 2 in the general Dairy Farms Competition. The cattle on this farm were awarded a high score. See Gossip Notes (Holstein News) in this issue. Photo by an Editor of Farm and Dairy.