Benefits And Costs Of Tile Drainage

by E. M. Wrubleski

Does tile drainage pay in Haldimand County? This question has been asked many times over the years by farmers in the county. There has been serious doubt that yield increases would cover the cost of installing tile. Costs of outlets also had to be considered. It does appear, though, that more and more farmers have been installing tile in the last two or three years.

Why has this increase come about? Perhaps the following factors may help to explain the increase:

– The price of land is going up. It is becomeing less expensive to improve land than to buy more land.

– There is a trend to the growing of more corn. Corn requires a highter investment in machinery and fertilizer. This investment must be protected by improved planting, growing and harvesting conditions.

– There is an increase in the size of the field machines. A farmer cannot afford down time in the spring and fall because of poor field conditions when he has such a large investment.

– A farmer is less able to withstand crop failures than he once was. The demands of taxation and creditors are greater than ever.

– Farmers are recognizing that tiling increases land values.

Stated another way, the benefits of tile drainage can be listed as follows:

– Increased crop yield because of earlier planting and better use of fertilizer.

– The land is easier to work. Harvesting conditions are better.

– Unused or low-producing land such as swales and ditches can be reclaimed. This increases yields and makes fields easier to work.

– There is a better chance of getting onto the land with manure.

What do experimental test plots tell us about increased yields due to systematic tile drainage? Four years of tests in Halton County on Haldimand clay show an average yield increase of 20 bushels of corn per acre per year. The tile runs were spaced 40 feet apart. These studies also showed increased yields of hay and silage on tiled land. There were not enough results to show whether the increases were significant.

The results of four years of tests in Elgin County on Conover clay, Haldimand Silt and Beverly Silt loam showed an average yield increase of 16 bushels of corn per acre per year due to systematic tile drains. None of these tests took into account savings due to better operating conditions.

When we look at tiling costs, it is difficult to predict what the total cost per acre might be. This varies from farm to farm. Roughly speaking, for random drainage of runs, the cost could be estimated at 25c per foot of tile installed.

For example, on a 40 acre field, a farmer might count 12,000 feet of runs to be tiled. The cost would be 12,000 x 25c which equals $3,000 total or $75 per acre. Systematic tile drainage at 40 foot spacing requires 1,089 feet of tile per acre.

The cost would be in the range of $275 per acre. The yearly payments on a $275 loan would be around $40 per acre per year for 10 years. This is with the help of a loan under the Tile Drainage Act. In order to offset this cost by increase of yield of corn, another 30 bushels or so of corn would have to be harvested per acre.

Despite all the benefits of drainage the cost may not be easy to recover on the basis of increase in crop yield. This goes for systematic tile. However, most farms have depressions and runs which could definitely be drained at a profit. These should be tackled first. Then other areas could be drained as the benefits become evident. Eventually some farms would end up systematically drained.

Contact the office of the Ontario Department of Agriculture and Food for information on available financial assistance in the form of capital grants. Information is available on the use of the Tile Drainage Act and Municipal Drainage Act to finance tile drains and open ditches. Technical assistance such as surveying is also available.

Other sources of practical information should be investigated before making a decision on tile drainage. Talk to your neighbors. Watch the results of the demonstration in conjunction with the International Plowing Match. Try some test plots of your own. With this information it should be possible to come to the right decision on tile drainage for your farm.

Tile drainage can pay on Haldimand clay. (ODAF Photo

The Basic Herd is determined as the number of animals or their replacements, expressed in terms of mature animals, which have been acquired without reducing income which is subject to tax.

To increase an existing Basic Herd an application to "Increase Basic Herd" must be filed before April 30, 1971, for the year of 1970.

Natural increase animals which matured in 1970 and purchased animals which matured in 1970 may also be included provided that the fair market value of the animals is added to the 1970 income.

If you are not on DHIA or ROP your sales are low to start with becasue the cattle don't have records, you may know the "run the pail over cows" but how do they do over 305 days, that's what counts!!

There are still openings in DHIA and ROP. If you're interested contact the Agricultural Office, Cayuga.

Low Butterfat Test

by Harold Clapp

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is usually the real good
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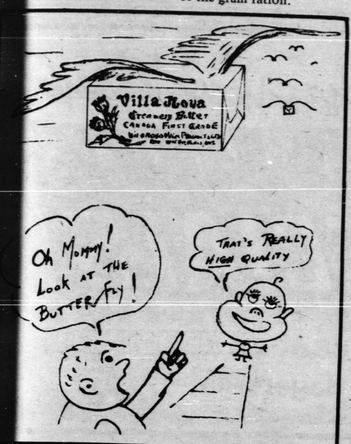
fat depression. Their
s excellent in quality,
the corn silage and haylage is well ensiled, usually with a very short cut, to aid the silage process and to increase the tonnage in the silo. The grain ration is well balanced and ground fine. The cows are milking well and everything looks ship-shape until the deflated milk cheque arrives.

Experience has shown that in trying to solve this problem, changes usually have been made in the feeding schedule, the feeding program, the quality of the forage, or the texture of the grain ration.



The cow has four sections in her stomach. This enables her to consume and digest large amounts of roughage and this can be her main source of nutrients.

In normal roughage rations, the roughage will supply sufficient fiber to slow up the movement of feed through the digestive system and thus allow more time to absorbe the nutrients for butter fat production.

In the digestion of fibre the cow will make a cud and in cud chewing will release fairly large amounts of saliva. This process increases the proportion of acetic acid, and will bring the ratio of acetic to propionic in the rumen to about a 60–20 ration. A narrower ratio can decrease the fat in the milk secreted.

Hay and haylage of exceptionally high quality, and corn silage which is finely chopped, will be lower in fibre and will tend to speed up passage rather than slow it up. Cows on this type of diet, or on lush pasture will eat a few mouthfuls of straw or coarse hay in order to adjust the ration.

Feeding large amounts of grain, will reduce the amount of acetic acid produced, by reducing the amount of forage consumed. Large amounts of grain consumed will increase the propionic acid produced and thus could bring the acetic to proprionic ration into the fat depressint area.

The common recommendation is to feed the grain ration as course as possible, and where large amounts are being fed, try and feed in several feedings rather than only two. Feeding the grain in pellet form, has proven to lower butterfat in some cases.

The advantages of fibre content of forages are reduced if we cut or chop the hay short, and if the corn silage is cut fine, especially immature corn silage.

A herd in Lamoton County recently experienced a fat depression, to the extent, where the herd average was 2.4 percent. The cows were on a well balanced grain ration based on finely ground corn and cob meal. The hay was high quality and the corn silage was fairly mature, but finely ground.

The feeding schedule was to feed the concentrate at the morning milking release the cows to the new bunk feeder for a full feeding of corn silage then tie the cows up to a feeding of high quality hay. The cows returned to their normal 3.7 percent, very quickly after the feeding schedule included a feeding of coarse hay before the grain ration was fed each morning.

This situation was identical to one in Middlesex county. The depression was blamed on switching from dry grain corn to high moisture, but really the problem stemmed from changing the feeding of hay from after the morning milking (before turning out to the feeder) to a noon feeding.

This is not meant as a knock against the full feeding of corn silage. It merely means that if we are to depend on corn silage as our chief forage, we must harvest at the dough stage and chop it coarse enough to provide the bulk and fibre necessary.

Many of the problem herds are using a concentrate high in corn. The addition of the cob will add fibre and help where a proglem exists. If this is not possible, the addition of oats could be a consideration. A high percentage of wheat in the grain ration has proven to effect the butterfat test.

The dairy cow is designed to handle roughage; the pig is designed to handle a concentrate ration. We have problems if we expect a pig to do well on a cow's ration. We will have problems if we expect a cow to do well on a soft finely ground ration suitable for a pig.

The amount and balance of protein and energy will effect the amount of milk produced, but there is no evidence to show their effect on milk composition.

The cow has "four stomachs", if we use all four the chances of a normal butterfat test are much greater than if we use only one of her "stomachs."

The ideal ration should supply a maximum amount of dry matter each day. The feed should be in a form so that the passage through the digestive system will be at a normal speed and both the grain ration and the forage should be coarse enough to take full value from the cud.

Quackgrass Control

by Howard Henry

Of all weeds, quackgrass is probably high on the list of those which cause most crop losses each year. Chemicals are now available which can go a long way towards eradicating this persistent perennial.

If corn can be grown for three consecutive years in the same field, excellent control of quackgrass can be obtained by applying 2½ pounds of 80 W Atrazine per acre sometime between September and November.

Corn is planted the next spring and then another 2½ pounds of 80 W Atrazine plus 1½ gallons of Atrazine-type oil is applied when the annual grasses in the corn crop are at the one to two leaf stage. Corn must be grown for three years following this treatment becausy Atrazine residue will damage other crops during this time.

If it is desired to grow corn one year only and still control quackgrass, Amitrole T can be applied in the spring.

Apply one gallon of Amitrole T on actively growing quackgrass foliage early in the spring. Plow or cultivate one week later and plant corn. When the annual grasses reach the one to two leaf stage, apply two pounds of 80 W Atrazine plus 1½ gallons of Atrazine-type oil per acre. Crops other than corn can be grown the year following this treatment with very little risk of Atrazine injury.

If crops other than corn are to be grown in the current year, Atrazine cannot be used because it kills or damages practically all crops except corn.

Apply Amitrole T at 1½ gallons of product per acre on actively growing quackgrass foilage. Wait at least 10 days and then plow the field.

Row cultivation after these treatments usually improves quackgrass control, especially if dry weather follows spraying.

The above treatments range in cost from $11 to $16 per acre for chemical. This may seem prohibitive at first glance, but one should remember that quackgrass, one of our most competitive weeds, is being controlled with no interruption in crop production.

The cost of leaving the land fallow and cultivating to control quackgrass will almost certainly exceed the cost of chemical control. In addition, the treatments applied in the corn crop control annual weeds as well as quackgrass.