



# IN THE TRENCHES

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## From the President's Desk

Greetings LICO Members,

The weather this summer has been surprisingly well balanced, due to the late start we had in the Spring. Hopefully this works out well for both farming and contractors.

The Huronview drainage day was a great success. It was very well organized and very informative. From a contractor's point of view, there was still much to learn in our industry, with many interesting concepts taking place. Not all were new ideas, just not practiced very often, especially on ground with a lot of slope. The event was well attended with as many as 500 participants. We will be looking forward in the upcoming years to see the results of the tests done by Ausable Bayfield CA on the different plots.

Also, the terraces to redirect surface water to grassed waterway are under construction now. If you are interested, it may be worth a drive back to Clinton to get a good look at the progress.

Michigan LICA and MSU Extension will be hosting farm drainage field days on September 12th and 13th near Riga, MI. MLICA's last field day of this size was in 2012, and it was well attended by the public and drainage industry. For more information please see: [http://michiganlica.org/news/2019\\_DrainageFieldDay\\_Flyer.pdf](http://michiganlica.org/news/2019_DrainageFieldDay_Flyer.pdf) and <https://events.anr.msu.edu/Field19/>

Be reminded that the 2020 LICO Convention dates are set for January 21, 22 and 23/20. To book your rooms at the Best Western Lamplighter, please call (519) 681-7151.

Our next LICO meeting will be held on September 9<sup>th</sup> at 1pm, at Bron if you are interested in going. Call or let any of the directors know if you have any questions our concerns about our industry.

Jason Van Gorp

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And all at once, summer collapsed into fall.  
*Oscar Wilde*

Winter is an etching, spring a watercolor,  
summer an oil painting, and autumn a mosaic of  
them all. *Stanley Horowitz*

Autumn shows us how beautiful it is to let  
things go. *Unknown*



**Land Measure** - Tom Dorn, Extension Educator, University of Nebraska**Measures of Area**

**ACRE** ♦ The unit of land area in the United States is the acre. An acre contains 43,560 square feet. Have you ever wondered why an acre is 43,560 square feet instead of a round number like 40,000 or 50,000 square feet? The story goes like this. When plowing with a yoke of oxen, it was standard practice to rest the animals (and the farmer) after plowing a furrow 1/8 mile long. An eighth of a mile therefore became known as a furrow-long or furlong; (a furlong is a nearly forgotten term for distance, except at horse racing tracks where it remains in common use).

The usual practice after plowing a furlong was to then turn the team around on a "land" and plow the other direction. Lands were laid out so the farmer would be able to finish a land every 10 rounds with a 10 inch plowshare (about 16.5 feet). One could imagine that perhaps farmers used a pole or rod that was 16.5 feet long when laying out lands because this measure of distance is still called a rod today.

By starting early in the morning, two lands could be finished before noon with a good yoke of oxen. At noon, the farmer stopped for his noon meal and to feed, water, and rest his animals. After the noon break, another two lands could be finished before quitting time. Four lands, or forty rounds (80 furrows) measured  $16.5 \times 4 = 66$  feet across by 1/8 mile (660 feet) long and was considered a good days work with a walking plow. The area plowed was therefore 43,560 square feet and became the standard unit of land area we call an acre.

By the way, a farmer who plowed 80 furrows an eighth of a mile long would have walked ten miles while wrestling with the hand guided walking plow. Is it any wonder this measure of land area became known as an acre (ache-er)! Actually, the Webster's New Collegiate Dictionary states that the name comes from the Old English *aecer*'; akin to Old High German *ackar*' (field), Latin *ager*' (field), Greek *agros*' (field), or Latin *agere*' (to drive).

**HECTARE** ♦ In the metric system the standard unit of land area is the hectare. A hectare is 10,000 square meters. Ten thousand square meters to a hectare is an intuitive quantity. It is easily remembered, measured and computed.

**CONVERSIONS** ♦ To convert from hectares to acres multiply hectares by 2.47. To convert from acres to hectares multiply acres by 0.4047.

**Measures of Length**

**ROD** ♦ On the American prairie where fences were constructed of posts and wire, farmers would place fence posts a rod (16.5 feet) apart. In addition to being about the right distance to support a wire fence, this helped them quickly estimate the number of posts needed (80 rods is a quarter mile). It also was useful when plowing a field. By spacing posts a rod apart, the farmer had permanent markers to use when setting up lands. Farmers took great pride in being able to plow a straight furrow. If the field was level, the farmer could use the post on the far side of the field to site to when breaking out a new land. Fence posts are still commonly spaced a rod apart and barbed wire still comes in 80 rod spools.

Much of Nebraska was settled by homesteaders. In eastern Nebraska, the Homestead Act awarded each homesteader one-quarter section (160 acres). When posts are spaced a rod apart on the perimeter fence of a quarter section, the space between each fence post represents an acre, if measured across the full width of the quarter section.

**CHAIN** ♦ Another unit used in land measure is the chain. A chain is equal to four rods or 66 feet. Modern surveyor's chains are not made of chain but are actually a flexible steel tape that can be wound on a spool. Chain measures are stamped with a die or marked with a brass tag every rod and every 1/10 of a chain, with the final section marked at 1/100 chain increments.

A standard acre as described above was one chain (66 feet) wide by ten chains (660 feet) long, or ten square chains.

Before the age of pocket calculators and computers, surveyors used chain measure to measure land because it simplified the calculations. The length and width of a rectangular tract of land could be measured using a chain measure with the area expressed in square chains. Since there are ten square chains to an acre, the conversion from square chains to acres could be done mentally. Odd shaped tracts of land could be divided into smaller parcels each representing a standard shape (a rectangle, a triangle, a trapezoid, and full or part circle) and each parcel could be measured using a chain-measure. The area of each parcel, in square chains, could be added and then divided by ten to report total acres in the field.

## Getting the Word Out! (about drainage) - Peter Johnson

The myths and misunderstanding around tile drainage abound! When I first took on the role of Environmental Advocate with LICO, I knew two things: 1. Tile drainage was (and is) essential for agriculture in Ontario, and 2. Tile drainage was "under the gun" from a public perception perspective. Since then, I have learned a LOT, and know I have even more to learn. But what was immediately obvious was how little tile drainage was actually understood by both farmers, and certainly by the public at large.

Starting with the huge success of the Huronview Drainage Innovations day, we have taken tile drainage to various field days and events to "move the bar forward" on drainage knowledge.

It has been a great success with lots of positive feedback. Many thanks to Mark Nesbitt (building the first drainage model), and Kevin McKague with version 2 of the drainage model (which occasionally doesn't leak). Both Kevin and Dr. Ian McDonald of OMAFRA have taken up the drainage knowledge torch, and have given presentations at field days across Ontario, both with me and on their own. Very cool stuff!

Below are three of the key messages we have been delivering, and some of the related questions we get. All LICO members should be promoting these messages, so help us out wherever you can!

**Ground water recharge:** drainage does not reduce ground water recharge. The water table must get to the level of the tile before water will enter the tile, and thus ground water recharge happens before the tile run. **Related question:** will the tile we are putting around the basement of my house dry up my well? (This was a serious question). No, not a chance.

**Plant available water:** tile drainage does NOT take away water the plants could use, or make plants grow deeper roots to get water. Only the free draining water is removed, which fills pores that would normally be filled with air. Crop plants cannot grow roots in saturated soils, so by removing the excess water, the soil has air that allows for better root development and more access to the "soil matrix" water, water that the plants can use to grow. **Related question:** why is it in a dry year that the crop is still better over the tile? The fact that crops are better over tile in a dry year actually proves that tile do not take away plant available water. Over the tile the excess water drains more quickly, allowing a bigger root system to develop, and improving the plants ability to access water during a drought.

**Environmental concerns:** tile drainage does not cause increased phosphorus movement into the lakes, as long as it is done correctly. In fact, soil is one of the best phosphorus filters, so as long as water moves through the soil matrix, it is generally "cleaner" (lower in phosphorus concentration) when it enters the tile than it was running over the surface. This argument falls apart, however, if you put a French drain or hickenbottom in the lowest spot in the field. Then surface water has a direct conduit into the watercourse, and we do not remove any phosphorus. This is a drainage design issue that the whole industry needs to come to terms with. Pond water for 24 hours, to force as much water as possible through the soil matrix without impacting crop growth and yield. **Related question:** does soil test phosphorus matter then? Yes, of course. Any filter can get plugged. With soil, the phosphorus level at which it seems to lose good ability to filter P out is 35 ppm (Olsen test). Growers with P tests over 35 ppm should try to draw down their soil phosphorus levels, while growers below 20 ppm should build up P levels for better crop growth.

Lots more fun stuff that gets discussed, and lots more for me to learn. When you see me, wherever, be sure to keep me on track. Tell me what you have seen happening, questions that you have been getting. And when you are out and tile drainage comes up in the discussion, be sure to pound home the above 3 facts. It is our industry, we can and do great work, and it is essential to agriculture!

## CALENDAR OF EVENTS

January 21 - 23, 2020

LICO Conference

Best Western Lamplighter Inn

591 Wellington Rd,

London, Ontario N6C 4R3



### OMAFRA Report - Tim Brook

#### **Contractor Courses**

The dates for the 2020 Drainage Contractor Courses have been announced and registration will open in the fall. The details are posted on the Ridgetown College website at: <https://bdc.ridgetownc.com/takecourse/drainage-courses/contractor-drainage-courses/>

The Primary Drainage Course is a 5-day course with 2 course offerings. If enrolment is low, one offering may be cancelled:

1. January 13 – 17, 2020
2. February 3 – 7, 2020

The Advanced Drainage Course is a 6-day course offered February 24 – 29, 2020.

All drainage courses will be held at the Marden Community Centre (north of Guelph) at 7368 Wellington Road 30.

#### **Licensing Update**

As of August 6, 2019, there are 96 licensed tile drainage contractors in Ontario. There are 177 licensed machines and 423 machine operators (253 Class A).

Remember, you are supposed to have your licenses with you when performing your work as a business or if you are operating a machine.

#### **Business Number**

Many OMAFRA programs will begin collecting the Business Number soon. The Business Number (also referred to as BN9) is a unique nine-digit business identification number assigned and managed by the Canada Revenue Agency (CRA). It's not just a tax number. The Business Number provides a consistent, standardized way of identifying businesses and make it easier to interact with government.

The majority of businesses already have a BN9. In 2020, OMAFRA will be asking you to provide your BN9 when you renew your business license under the Agricultural Tile Drainage Installation Act.

Our forms under the Agricultural Tile Drainage Installation Act will be updated to include space for you to give your BN9. Keep an eye out for this change and have your BN9 ready. More information will be provided with your business license renewal form.

If you have any further questions or concerns, please contact me:

Tim Brook, Drainage Program Coordinator at 519-766-3651 or [timothy.brook@ontario.ca](mailto:timothy.brook@ontario.ca)