



LAND IMPROVEMENT  
CONTRACTORS  
OF ONTARIO

[www.drainage.org](http://www.drainage.org)

A licensed contractor is valuable in assessing and correcting drainage problems.

# CROPLAND DRAINAGE

## A Spring Field Inspection Checklist

Spring is a good time to check for sub-surface drainage problems, for example:

- **Blow-outs** – are found where drain pipe water comes to the surface, often found where there is a drain blockage, a broken tile, a faulty connection, undersized drain pipe, where too much surface water is directed into a drain via inlets or where there is a sudden change in grade from relatively steep to nearly flat.
- **Cave-ins** – are typically found where drain pipe is installed deep through fine sand; i.e. quick sand, and where there is upward pressure from springs and groundwater that carries the sand into the drain until a void is created around and under the drain. Eventually, the surface soil collapses into the void. Repairs usually require installing a gravel bed below the drain and the installation of protected or non-perforated pipe through the sand. If this happens on a pipe municipal drain then inform your local municipal Drainage Superintendent who is responsible for performing the work.
- **Localized wet spots** – are usually the result of plugged drains. Common causes are debris that enters through unprotected catch basins or stand pipe inlets, dead animals in the drain pipe and tree roots. Mechanical causes include crushed drain pipe caused by heavy equipment traffic in wet soil conditions or where there is insufficient soil cover over drains in eroded areas. Drains may also be damaged during construction of buildings or fences. Other causes include bad connections, old drains not being connected to newly installed drains and drains not being installed with constant grade (silt collects in low spots).
- **Slow soil drainage** – Compacted hard pan below the tilled soil is the most common cause on clay and silt soil. Dig to check for this. Typically, the soil below the hard pan will be drier than the soil above it. The cause is too much tillage, heavy machine traffic on damp soil and crop choices that contribute to soil structure degradation. Deep ripping may give some very temporary improvement. Installing new drains will help but the problem may persist between the new drains. Improved soil management is the only good remedy for compaction. On some soil, iron ochre can seal off drains and then new drains may need to be installed. On other soil, sediment may collect in the drain pipe. Filter cloth and steeper drain grades may be required.
- **Drain outlets (outfalls) are blocked or restricted** – Check for sources of sediment that would cause restricted flow in outlet drains (ditches). Typically, this will be field soil erosion and ditch bank scouring. Contact appropriate authorities for permission to have the blockage removed. This would be the Drainage Superintendent for a municipal outlet drain.
- **Contamination in drain outlet water** – If contamination is suspected, then investigate and if confirmed, locate the sources, such as septic,

barnyard runoff or manure storage. Your contractor can reroute drains if necessary. Remember, drains are installed clean and it is important to keep them clean.

If drainage problems are not corrected promptly they can have a serious impact on crop production and also impact the water that leaves the farm. Licensed tile drainage contractors are trained and have the experience to install drains properly and to avoid most common cropland drainage problems. Most of these licensed contractors are members of the Land Improvement Contractors of Ontario, an organization that states that one of their objectives is “Encourage high quality work and fair dealings...” When a problem is identified they can diagnose the cause and efficiently correct it to the benefit of both the land manager and his/her downstream neighbours.

### For more information:

- “Operating and Maintaining a Tile Drainage System”, OMAF fact sheet – AGDEX 752/555, Dec 2010, order # 10-091.
- “Farm Tile Drains and Tree Roots”, OMAF fact sheet – AGDEX 555, Dec 2012, order # 12-055.
- “Best Management Practices – Cropland Drainage”, Agriculture Canada/OMAF/OFA, order: [www.publications.serviceontario.ca](http://www.publications.serviceontario.ca), 1-800-669-993



The Land Improvement Contractors of Ontario (LICO) is an association of professional drainage contractors and suppliers of drainage pipe and equipment. The focus of their business is soil moisture management to enhance crop production in Ontario.

*Reprinted with permission from Country Guide magazine*