



LAND IMPROVEMENT
CONTRACTORS
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ONTARIO CROPLAND DRAINAGE

Soil moisture management benefits everyone

Soil moisture management is essential to our crop and food production system. Much of the cropland in the humid Great Lakes region benefits from removing excess water. In other areas crop production requires careful use of irrigation water. Soil moisture, too much or too little, is the first limiting factor for crop production.

Healthy crops require both air and water in their root zone. On seasonally wet cropland we can achieve the right balance by removing excess water with the installation of sub surface drain pipe. The objective is to remove from the crop root zone only the water that hampers crop growth while at the same time conserving as much water as possible to sustain crops during dry weather. This requires sophisticated equipment in the hands of skilled operators. Drainage is not required on land where there is significant groundwater recharge; for example on land with gravelly sub soil.

Farmers benefit from sub surface drainage of seasonally wet soil. Crop insurance records from 1979 to 1999 showed yields were about 30 per cent higher on drained land for corn, soybean and wheat production. Drainage is in place on about two-thirds of the land used for these crops. There are other important benefits, too. Drainage allows an extended growing season, financial risk is reduced because crop production is more reliable,

and soil conservation practices such as no till can be used for production under a wider range of soil types and conditions. As run-off is reduced, water erosion of soil and movement of other materials is reduced by up to 90 per cent. This helps to maintain soil productivity and results in improved water quality in streams, rivers and lakes.

Soil with sub surface drainage performs some of the same functions as a wetland. The result is cleaner water, reduced downstream flooding and reduced stream bank erosion. Soil filters contaminants from water as it moves down to drains, and peak flow in streams is reduced because the water that infiltrates the soil is released slowly from drain pipe outlets. Research shows that drainage by itself reduces water run-off by 20 to 87 per cent and phosphorus run-off by 31 to 45 per cent. This is because drainage improved the physical condition of the soil and permits it to hold more water, releasing it more slowly.

Drains are installed clean. It is important to keep them clean so we can all benefit from cropland drainage. Improved cropland management has been a help and progress must continue.

Advances in soil science, crop science and drainage have resulted in a three-fold increase in production since 1950 and that is happening on 30 per cent less cropland.

LICO activities that benefit all

- Professional development (conferences, field days, training courses) – ensures contractors are well informed in all aspects of cropland drainage
- Funds and participates in research
- Supports education – BMPs (Cropland Drainage), fact sheets, school study materials
- Participates as a stakeholder in legislation assessments

The result has been inexpensive food, cleaner water and more land available for woodland, wetland and wildlife habitat.

Together farmers and society benefit from responsible, progressive soil moisture management.

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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.