

Environmental Farm Plan

Right actions in the right places

Environmental stewardship through responsible agricultural nutrient management

The Canada-Ontario Environmental Farm Plan (EFP) is a successful educational process and tool to help farmers assess areas at risk from agriculturally sourced nutrients on their farms and set priorities to take action. Farmers are adopting Best Management Practices (BMP) that target areas of potential risk on their landscape through educational programs like the EFP, proven technologies, cost-share opportunities, regulations and encouragement from within the agricultural community to constantly raise the bar.

The use of nutrients in farming is essential, and the EFP helps farmers manage and use those nutrients responsibly in ways that meet the needs of their individual farms.

" Our new water filtration system makes it possible for us to recycle water in our greenhouse, cutting our water and fertilizer use in half."

- Southern Ontario flower grower

" We improved our fertilizer storage to make sure those nutrients weren't affecting the local watershed."

- Central Ontario crop farmer

" We built a concrete barnyard with a water catchment area to keep manure runoff out of local water courses."

- South-western Ontario dairy farmer

Turn the page to learn about best practices for managing nutrients and the **Environmental Farm Plan** process – and meet some of Ontario's environmental stewards.

Mitigating farming's environmental impact by responsible management of nutrients

Terry Reesor admires the small lake on his family's farm near Stouffville, Ontario. In fact, it's one of his favourite spots in the world, so preserving its pristine environment is a top priority for him.

The body of water is located quite close to their farm and farm supply business, Reesor Seed and Grain, and the associated liquid fertilizer storage. Terry has always carefully monitored the storage and handling of the product to ensure the environment was not at risk, but wanted to do more.

The answer was a secondary containment system for liquid fertilizer storage, consisting of a membrane liner that was installed underneath the storage tanks as a second line of defence to minimize the risk of leaks. This helps make sure that nutrients are contained in the storage tanks and don't make their way into the environment.

Terry is one of many Ontario farmers who go the extra distance to do the right thing when it comes to managing nutrients on their farms. They make sure they're taking the right actions at the right time to help minimize risk to our environment so all Ontarians can enjoy it – now and in the future.



What is an Environmental Farm Plan?

The Environmental Farm Plan process helps minimize potential risks to the environment that may be found on-farm through a confidential, voluntary process that educates and motivates farmers to target actions to priority areas. Farmers attend a two-day workshop that helps them identify environmental strengths and potential environmental risk areas on their farm and then prioritize actions to appropriately address those risks.

The EFP workbook is comprised of 23 comprehensive worksheets. Each worksheet addresses a different environmental issue and farmers complete the worksheets that apply to their own farms to develop an action plan.

As part of the program's learning process, farmers look at the water, soils and environmental make up of their farms, as well as their farming practices, to evaluate risk areas and identify how to take action through Best Management Practices (BMP). The completed action plan is then verified through a peer-review process.

The EFP was launched in Ontario in 1992. Since its inception, more than 70 per cent of Ontario's farmers have taken the EFP workshop. From April 2005 to December 2011, approximately 13,000 farm businesses participated in third edition EFP workshops and had their EFPs and action plans peer reviewed.

An EFP action plan can help these farmers make balanced economic and environmental decisions in order for their business to be sustainable. Prioritizing actions helps them spend time and effort on seeking further advice and assistance on those improvements that will address the environmental risks on their farm and in their watershed. Cost-share funding may be available to assist in implementing BMPs they have prioritized.

Did you know...?

Did you know that over **\$310 million** has been invested in more than **22,000** on-farm environmental improvement projects? These projects were documented through cost-share programs associated with the EFP between April 2005 and December 2011.

Ontario farmers have contributed approximately **two-thirds** of that investment themselves, highlighting their ongoing commitment to mitigating environmental risk.

Best management practices and agricultural nutrients

A BMP is based on an approach or technology that has been shown to work and be cost-effective for conserving soil, water and other natural resources in rural areas. In farming, there are BMPs in place for growing crops and raising livestock.

Nutrients are essential to sustainable food production. It is important that nutrients are managed carefully to maximize crop yields and food production while reducing potential losses to the environment. Nutrient use efficiency is improved by practices that help farmers use nutrients at the right rate, at the right time and in the right place.

There are many ways to manage nutrients responsibly, including:

- Soil or plant tissue testing to determine the right amount of nutrients needed by the crop
- Accounting for nutrients in manure and previous crops
- Use of global positioning systems (GPS) to more accurately apply nutrients and keep them away from open water and wells
- Having adequate manure storage so that manure nutrients can be applied at the right time of year to optimize crop growth and minimize risk to the environment
- Collecting and treating runoff from yards and feedlots that can contain nutrients
- Recycling water from greenhouses to recover nutrients
- Use of erosion control measures to prevent movement of nutrients attached to soil particles

Many of these options and more are supported under the Canada-Ontario Farm Stewardship Program and other financial assistance programs to assist in implementing these practices on-farm.

Farmers are taking the right actions to manage agricultural nutrients

Results of a recent study show that Ontario farmers are taking action to minimize environmental risks by implementing BMPs that focus on nutrient management. The study was initiated by partners in the EFP to investigate the relationship between where on-farm projects were being implemented and where the highest levels of agricultural nutrients are being generated and used across the province.

Using statistical analysis, a very strong relationship was found between the number of nutrient management practices implemented and the level of risk from agricultural nutrients. The most common best practices associated with nutrient management implemented by farmers included precision agriculture using GPS, nutrient management planning, manure storage and handling, and controlling barnyard runoff.

The EFP is directing participants to priority action to reduce risks from agricultural nutrients.

Mini glossary

NUTRIENTS: naturally-occurring elements, such as nitrogen and phosphorus, needed by plants for growth and development. Nutrients are present in manures, fertilizers, crop residues and the soil.

NUTRIENT MANAGEMENT PLANNING: process of accounting for all sources of nutrients to match your crop's needs according to the unique conditions of your land, proximity to water resources, production goals, equipment and safety concerns.

PRECISION AGRICULTURE: using modern technologies, like global positioning systems (GPS), to precisely apply crop inputs to the landscape and provide record of the applications.

RUNOFF: water flow that occurs when water is not absorbed by the soil and makes its way across the surface of the landscape into watercourses.

Cutting greenhouse water and fertilizer

The EFP is guiding farmers in making the best choices to benefit the environment and the farmers' bottom line. For example, horticulture farmers are investing in ways to manage fertilizer use and recycle water in order to minimize potential risks to the environment, reduce water withdrawal and conserve energy.

Van Geest Bros., growers of cut flowers in the Niagara Region, installed a sterilization and filtration system for reusing greenhouse irrigation water in 2010.

Thanks to the new system at their Grimsby location, water is now contained and re-used after it has been sterilized (to prevent the spread of plant diseases and pathogens), cutting the Van Geests' fresh water consumption by about half in the first year of operation. John Van Geest also noticed a 50 per cent drop in their fertilizer use.

"It made more sense environmentally for us to contain the runoff on site and re-use the water," he says. "With our new system, it can be re-used endlessly, which really lessens the strain on the local environment."

Minimizing risks to local water courses

Livestock farmers are investing in practices to manage and store manure, a valuable nutrient source they can use in growing crops. Storing and applying manure at the right times and places, for example, is helping protect water while building healthy soils and growing healthy crops.

Leroy and Marianne Cook are dairy farmers in South-western Ontario. There's a small stream on their property that runs close to their barn and it feeds into a water course that flows downstream through a nearby city.

When farms were first established in Ontario in previous centuries, they were deliberately situated near water courses to help feed and water livestock and provide water for the family. As farms and nearby urban areas have grown, farmers like Leroy Cook are now working to take the right actions to minimize any potential risks posed by agricultural nutrients.

Last year, the Cooks undertook a large building project to minimize the risk of nutrients from their livestock operation from reaching local watercourses and nearby urban communities.

use by re-using nutrients

Another Niagara flower grower recently installed flood benches in their Niagara Region greenhouse facility to capture all drain water and direct it to a filtration and holding area for re-use. They were looking to expand their propagation area, says Gerard Schouwenaar of Orchard Park Growers, and used this opportunity to implement a solution that would provide environmental benefits as well.

“The environment was definitely part of our decision to install flood benches and it has paid off with other advantages as well,” says Schouwenaar.

Any water they use in the propagation of their gerbera plugs can now be fully re-circulated and used elsewhere in their greenhouse instead of being disposed of, eliminating the possibility of nutrients entering the environment and lowering their water consumption. As a production benefit, the new system is resulting in very uniform growth of the gerbera plugs and has reduced the need for hand labour for watering.



The “4R” Approach

Many farmers are adopting a 4R approach for nutrient stewardship:

Right source Right rate Right time Right place

This concept also helps ensure the proper nutrient management BMPs get adopted in the right places. The 4R approach was developed and is promoted by agricultural industry organizations, including the International Plant Nutrition Institute and the Canadian Fertilizer Institute. For more information, visit www.ipni.net/4r, www.cfi.ca/whatwedo/nutrients, and www.cropnutrientscouncil.ca/en.

This included a covered concrete barnyard that gives cattle a dry area to walk around, keeping them cleaner and drier, which benefits their overall animal health and welfare.

They also installed eaves troughs on their barn to channel the clean rainwater off the roof and away from the building. Water is now diverted into a clean, sloped catchment area where all runoff water is contained and directed away in a manner that does not pose risk to the stream.

“We have two kids keen on farming and this was definitely the right thing to do for the environment and for our farm’s future,” says Leroy.

Farmers use different technologies and production methods on their farms, depending on what kinds of crops they are growing or livestock they are raising. What they have in common, however, is a commitment to environmental stewardship and a demonstrated willingness to take appropriate action where needed.



Environmental Farm Plan

If you're interested in learning more about what farmers are doing to manage our environment responsibly, visit:

Ontario Soil and Crop Improvement Association/Environmental Farm Plan www.ontariosoilcrop.org

Ontario Ministry of Agriculture, Food and Rural Affairs www.omafra.gov.on.ca

Agriculture and Agri-Food Canada www.agr.gc.ca

Ontario Federation of Agriculture www.ofa.on.ca

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The programs are administered by the Ontario Federation of Agriculture (OFA) acting on behalf of the Ontario Farm Environmental Coalition. OFA enlisted the Ontario Soil and Crop Improvement Association (OSCIA) to deliver the programs to agricultural producers.

Canada



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