Tile Drain Control Boxes

Grant Rate	Maximum Grant
60%	**$2,000 / box**

Rationale:

- Retains water for crop growth which will help increase yields
- Reduces crop nutrient (nitrogen and phosphorus) losses to surface water

Eligible Projects:

- Installing Control Tile Drainage Boxes on existing or new agricultural tile
- *Note: tile installation is not eligible*

Conditions:

- Must meet or exceed legal requirements (e.g. *Agricultural Tile Drainage Installation Act)*
- The project will need be protected for at least 10 years and needs to be designed to protect surface and groundwater quality
- Written permission of the landowner(s), where the project will take place, must be given on the grant application and a landowner agreement signed if the grant is approved

Eligible Costs:

- Purchased materials and supplies
- Contract labour (from a licenced company)
- Profession fees (consulting) for design, construction, and supervision

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Increase Yield: Installing tile drainage control boxes helps reduces crop-field nutrient losses.

An Ontario study, with a five year corn and three year soybean rotation, found an average annual benefit of $55/ha for corn and $21/ha for soybeans compared to uncontrolled drainage.

Reduce Water Pollution: During the growing season, they reduce tile drain pollution into streams:
- phosphorus (63%)
- ammonium (57%)
- nitrate (65%)

Conserve Water: They help conserve precipitation in the root zone for crop usage.

(Agriculture and Agri-Food Canada 2010)

Ineligible Costs:

- Labour and machinery use of the applicant, or the applicant's business
- Work that does not comply with the *Agricultural Tile Drainage Installation Act*
- Tile drainage installation, converting seasonal streams to tile, drainage ditch clean-outs
- Indirect costs, such as removing tree stumps, cleaning up fence lines, land levelling, etc.

How do Tile Drain Control Boxes Work?

Controlled tile drainage gives the farmer better control of their water level in the field. Tile drain control boxes are a groundwater-level control structure, using removable PVC panels ('stoplogs'), to help manage the depth of the water-table above the tile line during the growing season. They are placed close to the outlet. With uncontrolled tile drainage (Figure 1) water drains directly into the water body at a set level. With the control structures levels are controlled by adding or removing panels (Figure 2 & 3). This practice is only suitable on flat fields (0-1% slope). The pattern of the drainage system and drain pipe spacing determine where and how many control boxes are required. With proper care, each structure could have a lifespan of up to 25 years.

Operation is simple. The panels are removed from structures in early spring to permit free drainage, and soil warming, until crops are planted. Then the farmer uses the metal handle tool to add panels to the desired level. This restricts drainage so the crops can access the water and nutrients during the growing season (Figure 2). This helps increase yield and reduces tile discharge and nutrient (nitrogen and phosphorus) losses into streams and rivers.

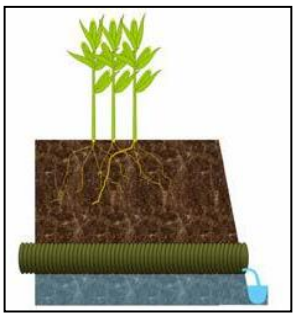

Figure 1

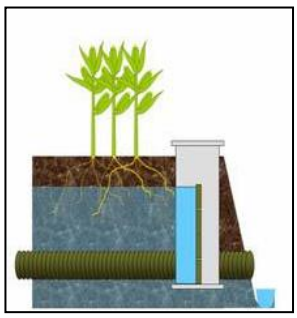

Figure 2

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Typical Annual Operation and Maintenance:

1. **Early Spring:** Remove panels to allow maximum drainage, and soil warming prior to spring planting and other operations
2. **Post Seeding and Emergence:** Insert panels to help retain water and nutrients in the field for crops - to provide capillary water to the crop's root zone
3. ***Only if required:*** Before fall harvest and field operations, if field is too wet to avoid compaction, remove boards
4. **After harvest**: Install panels to hold water and nutrients in the field and soil over winter

Figure 3