



LIVING LAB - ATLANTIC

Sustainable Pest Management RDT – Pest Management Centre Activities

Pesticide Rinsate Biobeds

- Pesticide Handling areas contribute significantly to pesticide contamination in ground and surface water.
- Pesticide rinsate biobeds can remove >98% of pesticide from rinsate.
- A demonstration site was set up at Harrington Research Station.

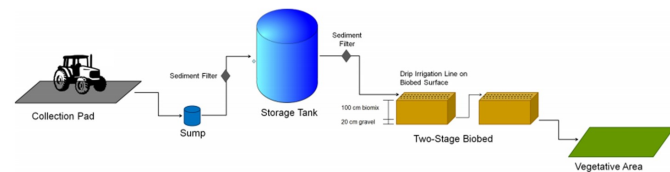


Figure 1. Typical setup for Rinsate Biobed System to collect and remediate pesticide rinsate from farm operations (AAFC publication A42-123/2018E).



Figures 2-4. A Pesticide Rinsate Biobed was set up at Harrington Research Station to test and demonstrate this technology to growers in Atlantic Canada (photos: Anderson, Laengle).

Crop Rotation Economic Calculator

- Potato is a very input intense crop.
- ~80% of pesticides in water monitoring in PEI is associated with potato (prelim. data).
- An extended crop rotation has the potential to reduce pesticide inputs by 10-30+%.
- A crop rotation calculator was developed to estimate projected earnings and compare the environmental profile of different crop rotations to support grower decision making.
- The calculator is pre-populated with publicly available values, and is fully customizable by the user.

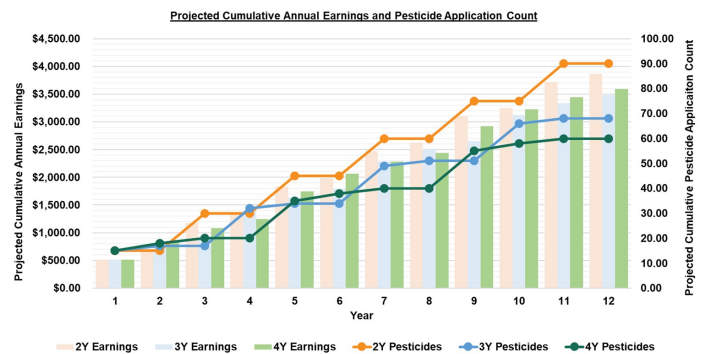


Figure 5. Example output from Crop Rotation Calculator comparing different crop rotation lengths (2 years - potatoes/forage; 3 years - potatoes/barley/forage; 4 years – potatoes/soybean/barley/forage).

Water quality monitoring and crop protection input estimation

- Growers need reliable and sustainable pest control products to protect the investments made into their crops.
- Better information is needed on which products are offer the most benefit while minimizing environmental impacts.
- A process was developed to estimate crop protection product inputs at the landscape level on the basis of remote sensing data products and crop specific typical use patterns.
- Over 400 water monitoring samples were collected and are currently being analysed.
- Once results are available, linking water monitoring data with estimated landscape level inputs will enable informed decision making on selecting suitable crop protection products to minimize the environmental footprint.



Figures 6-8. Visualization of process to estimate agricultural inputs at the watershed level. Visual imagery is used to delineate field boundaries (top left), annual crop inventory data is then used to identify crops grown (top right) and typical, crop specific input estimates are applied to extrapolate watershed level input for a specific compound (bottom figure). The areas shown are the Breadalbane and Dunk River watersheds.

(figures: Merzouki, Hann)

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