

## PROCEDURE FOR USING ROTATION CROPS AS A WIREWORM MANAGEMENT STRATEGY

The strategy of planting buckwheat or brown mustard as rotation crops has been shown to reduce wireworm damage in potatoes (see table below). The procedure for implementing this strategy is as follows.

Brown Mustard (Centennial) 8-10 lbs per acre or 11.2 kgs per ha

**OR**

Buckwheat (Mancan) 40 lbs per acre or 44.8 kgs per ha

Fertilizer is required. Depending on your soil type and soil analysis the appropriate amount of N:P: K should be applied. Mustard responds well to N. If appropriate amounts are applied at first planting additional fertilizer may not be needed for second planting. No fertilizer is required following a plow-down of a red clover crop. *The reason for using fertilizer is to have a vigorously growing crop which can produce high quantities of the chemicals in its roots that are toxic to the wireworm.*

Plant one of the above crops (brown mustard or buckwheat) in early June, as soon as crop reaches the seed forming stage; disk the crop into the soil, most likely end of July approximately 45 days after planting. Two to three weeks later in August, plant another crop. This second crop may or may not produce seeds depending on the temperature in your area. Repeat the procedure in year 2. Plant your main crop, potatoes, carrots, rutabagas, corn etc. in year three. (see table below for research results)

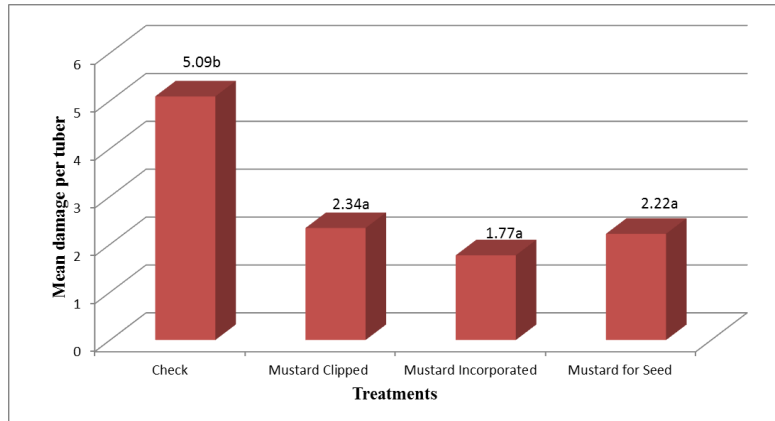
Alternatively, instead of planting two crops, clip the first crop of mustard in August to 6-8 inches high, the plants will continue to grow and allow the wireworms to feed on living roots containing the toxic glucosinolates. However, it is important to monitor the field regularly to make sure that the plants are not producing seeds again, if so a second clipping would be needed. (see graph below for research results).

The above procedure in our large scale on farm research trials gave the following results.

Total market yield, number of undamaged tubers, holes per tuber, tonnes per hectare lost due to wireworm damage and marketable yield for the processing market in a potato crop following a 2 year rotation with brown mustard, buckwheat, barley/clover or alfalfa at Hazelbrook in Prince Edward Island, Canada.

Crops	Total Market yield (t/ha)	<b>NO Damage</b> (t/ha)	Number of Holes per tuber	<b>Tonnes/ha lost</b> due to damage (for Processing)	Tonnes/ha <b>Marketable</b> (for Processing)
Brown Mustard	46 t/ha	16.2 t/ha	03	0.5 t/ha	45.5t/ha
Buckwheat	46 t/ha	12.6 t/ha	05	3 t/ha	43 t/ha
Barley	47 t/ha	2.3 t/ha	20	17 t/ha	30 t/ha

Comparison of the mean damage per tuber between three brown mustard cropping systems and a barley check conducted the year before planting potatoes.



In order to reduce wireworm populations the proper implementation of an integrated pest management approach is important. Steps to follow

1. Monitor fields and verify the presence of wireworms
2. Trap adults using NELT™ and pheromone traps
3. Use insecticide registered for wireworm control when planting the main crop
4. Use appropriate crops during rotation years.

If you have any questions call

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