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Crop Rotations Examples for the Maritimes

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Canada

Examples of Maritime Crop Rotations

- Potato
- Dairy
- Cash Crop
- Weed Suppression

Year	Potato Rotation			
	1	2	3	4
1	Potato	Potato	Potato	Potato
fall cover	Fall Rye	Fall Rye	Fall Rye	Fall Rye
2	Soybean	Fall Rye	Corn	Wheat
fall cover	W. Rape	R. Clover	R. Clover	R. Clover
3	W. Rape	R. Clover	Alfalfa	R. Clover
fall cover	Buckwheat	R. Clover	Alfalfa	R. Clover
4	B. Mustard	Canola	Alfalfa	P.Millet
fall cover	W. Rape	Buckwheat	Alfalfa	Buckwheat

Cash Crop
Disease Suppression
Green manure/cover crop

Year	Potato Rotation			
	5	6	7	8
1 (spring)	Potato	Potato	Potato	Potato
1 (fall)	Fall Rye	Fall Rye	Fall Rye	Fall Rye
2 (spring)	Canola	P.Millet	Barley	Barley
2 (fall)	Volunteers	Stubble	R. Clover	R. Clover
3 (spring)	Oil Radish	Carrot	R. Clover	R. Clover
3 (fall)	Oil Radish	Barley	R. Clover	R. Clover
4 (spring)	Sudan grass	Peas-Oats	R. Clover	R. Clover
4 (fall)	Buckwheat	Stubble	R. Clover	R. Clover

Conventional

Dairy Options for fertile, well drained land

Alfalfa	K ₂ SO ₄ with B
Alfalfa	
Alfalfa	Manure after 1 st cut
Alfalfa	
Corn	20 ton/ac manure preplant
Barley/oats/peas	10 ton manure Sept
Winter Cereal	

Dairy Options non-Corn or Alfalfa land

Winter Rye	Cereal, early pasture, plow-down for sp cereal
Red Clover	Early plow with cover or Late fall plow
Barley or Oats with peas	Or spring plow, oats if wet land, can take off as silage, fall cover
Spring or winter cereal (Rye, wheat, spelt)	

Require 7-8 acres per milking cow to grow most of your feed
Acreage will decrease the warmer the climate and better the land

Cash Crop with Winter Cereals

Milling wheat	Fall sweep add 75 lbs rye/ac
Soybeans	
Barley/peas	Fall sweep, plant winter cereal, and fertility
Winter cereal frostseed red clover	
Red Clover	Mow 1 st cut, add compost

Expect 2000 lbs of soybeans and 1.25 tonne of cereal/ac
Cannot sell straw, if do will have to add K

Cash Crop with Annuals

Barley	Fall- compost , 75 lbs rye or oats/ac, sweep
Soybeans (solid or in rows how wide?)	
Barley/peas	Fall sweep, plant winter cereal, and fertility
Spring cereal <u>underseeded</u> red clover	
Red Clover	Mow 1 st cut, 3 options for plowing, could add bit of fertility to clover

Mixed cereals will work provided harvest dates are same.

Weed Control - tillage and crops

- Smother or exhaust the weeds
- Buckwheat – 6 weeks nothing will compete with it for summer growth
- Oil Radish – slower to start than buckwheat but will smother very well, handle frost and absorbs N

1 Option

- Till in spring, once per week for 3 weeks
- plant buckwheat till into soil in 6 weeks
- plant oil radish/winter rye leave for cover

Buckwheat



P scavenger, seed and grain options

Oil radish or Oilseed radish



Pest suppression, fast growing, excellent for soil building

Excellent nutrient uptake and release to cash crop

Measuring Effectiveness of Cover Crops

Cover Crops Planted following Potato Harvest

No Cover
Winter Canola
Spring Canola
Winter Wheat
Ryegrass
Oats
Ryegrass/oats
Oil Radish

J Macleod, B Sanderson, 1999

Oat Yields following Year after Potatoes and various fall Cover Crops

No Cover	2440 kg/ha 2200lbs ac
Oil Radish	3364 kg/ha 3000 lbs/ac
All other cover crops	2877 kg/ha 2590 lbs/ac

Each is a significant difference.
Oil radish most able to hold and release the nutrients
back to oat crop.

Sweeping Cereal Fields after Harvest



Sweeping Cereal Fields after Harvest



Clovers – Red, alsike, white, wild, crimson, sweet



Fix N, provide cover, stored feed, pasture, cheap seed, well adapted

Nutrient Release from Plow-down Red Clover

Yield of Grain Corn in bu/ac at Guelph following:

Plow-down red clover No fertilizer	110 bu
Corn previous crop No fertilizer	87 bu
Corn previous crop 120 lbs Nitrogen	115 bu

Plow-down of clover stand can provide 40-50 units of Nitrogen to a growing crop in Maritime region

B Christie, 1985

Fall Covercrops, 01- 03 Organic Farm in Cherry Hill Oats/oilradish



Check – no fertility



Lobster shell application

Lack of cover, erosion control, less fertility to add to crop

