

# Rotation Design



A systems approach  
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# Crop planning

- Cropping plan- A plan of crops within a rotation to cater for a specific market, containing information to allow the correct number of plants to raise, seeds to sow and timing to achieve optimal cropping

**Cropping Plan-Field Crops. Field area = 2.0 ha      Production per 100 customers**

Plot area = 0.28 hectares. Rows @ 0.675 meters this is 36 rows per 28 x 100m per plot.

A double row @ 685 mm uses up 140 sq meters (0.014 ha)

Crop	Availability	Total req. (Tonnes, Kg or #)	Seed req. (Kg, g, #)	Plant #	100m rows.	Area (hectares)	Sowing Week #	Planting Week #	Variety	Spacing	Notes
<b>Potato early</b>	Mid June –end July	1.00 T	150kg		6	0.040	12-15		Premier	225 x 675	Varieties may depend on availability
<b>Second early</b>	July-end August	1.5 T	125kg		6	0.040	12-15		Romano (red)	300 x 675	
<b>Maincrop</b>	September-March	6.0 T	500kg		28	0.189	12-15		Remarka/Milva	400 x 675	
<b>Brussels Sprout</b>	Sept.-March Every other week	1200#	2400#	1400	8	0.054	14-15	20-24	Wellington. Lunet. Seven hills.	600x675	Raise in seedbed
<b>Cauliflower Autumn</b>	October-late November	1000#	2800#	1400	8	0.054	20-21	26-27	Wallaby. Snowcap. Violet Queen	600 x675	Raised in seedbed
<b>Cabbage-autumn +winter</b>	October-March  Almost weekly Good standby for possible crop losses with other brassacae	4500#	5000# 25g	500-1000 of each type.	18	0.121	22-26	28-30	Holland w.white. Xmas Drumhead. January King. Celtic. Winter king. Savoy. Red cab.	400 x 675	Raised in seedbed.
<b>Sprouting broccoli</b>	Feb-April	250kg	100 each var. 10g	800 (4 x 100 each var.)	2	0.014	15-20	22-27	Early white. Late white. Early purple. Red Arrow.	500 x 675	Raise in seedbed

# Rotations-A Systems Approach

## Definition:

- Complex whole, set of connected things or parts.
- Pest, disease, fertility cannot be considered in isolation.
- Grower needs to understand and consider the whole system.
- Each component of the system is dependant on each other, with the health of the soil central to the whole system.

# Rotation-definition

- A prescriptive set of rules to govern the sequence of crops on a piece of land to optimise natural fertility, reduce the problems of pest, disease and weeds and to allow for sustainable crop production

# Rotations Why?

- Optimise fertility
- Control weeds
- Reduce/eliminate pest disease problems

# The principles of Rotations

- Minimise uncovered soil
- Maintain or increase organic matter levels
- Alternate weed susceptible crops with weed suppressing crops
- Balance fertility building with exploitive cropping
- Crops with differing root systems included
- Leguminous break crops must be included
- Plants with similar pest and disease risk must be separated by an appropriate time interval

# Rotation design

- **Rotation design is fundamental to the whole system of organic production.**

- Factors to consider are:-

## **Soil:-**

- Physical condition
- Drainage
- Water holding capacity
- Fauna content
- Fertility

## **Site:-**

- Altitude
- Aspect
- Exposure
  - **Crops to be grown, cropping plan.**
  - **Sources of fertility**
  - **Any pest/disease/weed problems?**



# Field rotation-Hardwick

## Stockfree rotation

- **Year 1+2** Red clover/Lucerne. Cut and mulched.
- **Year 3** Potato Followed by o/w green manure, clover/vetch if sown by mid Sept, Cereal rye for later sowing.
- **Year 4** Brassicas. Winter/spring cropping. Possible under-sow cereal rye late September.
- **Year 5** Allium. Onion+leek. Onion intercropped clover. Leek u/s cereal rye/oats.
- **Year 6** Carrot after leek. Parsnip after onion.
- **Year 7** Sweet corn. Squash. Both u/s red clover/Lucerne.

# The field rotation



Year 1+2



Year 3



Year7



Year 4



Year6



Year 5

# Design your own Rotation

- Celery
- Lettuce
- French beans
- Courgette

With green manures where appropriate

# Design your own

Year 1

**Lucerne/clover.** Compost applied\*

Year 2

**Celery**, harvested Sept.

Followed by o/w trefoil

Year 3

**Lettuce** double cropped.

Followed by o/w **S. Onion**

Year 4

**French bean**

Followed by o/w Crimson red clover or Lucerne.

Year 5

**Courgette** undersown Lucerne/clover

6 crops in five years

18 months long term fertility building

Winter cover crops

Early spring N fixing with-

Trefoil- year 3.

Crimson red clover year 5

\* 25tonnes/hectare

# Design your own Rotation

- A two or three year fertility ley
- Potatoes
- Carrot/parsnip
- Brassicae
- Onion/leek
- Optional other crops.