

***PREREQUISITES, SELECTION OF LAND,  
CONVERSION PERIOD & SOIL AMENDMENTS  
FOR ORGANIC SEED PRODUCTION***

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# *PRE-REQUISITES*

## **1. Choice of crops and varieties**

- ⦿ Seed & planting materials should be organic source
- ⦿ Resistant to pests & diseases
- ⦿ If certified organic seed is not available, conventional seed is permitted
- ⦿ GMO crops not allowed

## **2. Duration of conversion period**

- ⦿ Annuals: 12 months
- ⦿ Perennials: 18 months
- ⦿ Depending on past use of the land & ecological situations, certification agency reduce or extend the conversion period

### **3. Diversity of crop production**

Soil health & fertility is important

- ⊙ Mixed cropping
- ⊙ Crop rotation with legumes
- ⊙ Cover crop reduce weeds, pests & diseases

### **4. Fertilization policy**

- ⊙ Biodegradable materials of plant or animal origin from organic farm system
- ⊙ Fertilization management should minimise
  - Nutrient loss
  - Avoid accumulation of heavy metals
  - Maintain soil pH
- ⊙ Avoid excess manuring
- ⊙ Avoid human excreta on crops used for human consumption
- ⊙ Biofertilizer is very safe

## **5. Pests, diseases & weed management**

- ⊙ Control measures include
  - Crop rotation
  - Green manures
  - Balanced fertilization
  - Early seed bed preparations
  - Mulching
  - Mechanical control
  - Disturbances of pest development cycles
- ⊙ Botanical pesticides allowed
- ⊙ Thermic or physical methods permitted
- ⊙ Use of synthetic chemicals prohibited
- ⊙ GM crops prohibited

## **6. Soil and water conservation**

- ⦿ Soil and water resources should be handled in a sustainable manner to avoid erosion, salination, excessive and improper use of water and the pollution of surface and ground water.
- ⦿ Cleaning of land by burning (e.g. slash and burn and straw burning) should be restricted.
- ⦿ Clearing of primary forest for agriculture (jhuming or shifting cultivation) is strictly prohibited.

## **7. Collection of non-cultivated material of plant origin and honey**

- ⦿ Wild harvested products shall only be certified organic, if derived from a stable and sustainable growth environment and the harvesting shall not exceed the sustainable yield of the ecosystem and should not threaten the existence of plant or animal species.

## *LAND SELECTION*

- ◎ Bonina & Cantliffe (2004) – Vegetable organic seed production
- ◎ Ensure proper land selection for high quantity & quality of organic seed
- ◎ **Crop rotation:** Land rotated with different crops reduces seed contamination by pests and diseases
- ◎ Land should be free from weed:
  - Difficult to control weeds by organic means
  - Compete with crops
  - Problems of seed yield & seed purity

## *LAND PREPARATION*

- ⦿ Tilled to ensure fine seed bed
- ⦿ If not tilled properly results in poor germination especially small seeded crops
- ⦿ Good water holding capacity for uniform germination & growth
- ⦿ Drip irrigation is an effective way to deliver water to crop – minimises pests and diseases and weed problems

# SOIL FERTILITY

Ensure good soil fertility and fewer soil diseases

◉ Simone *et al.*, (2001) recommended

- Crop rotation
- Use of cover crop
- Green manure crops
- Mulching
- Animal compost
- Plant material compost

◉ White (2001) recommended

- Bone meal
- Blood meal
- Horse & chicken manure,
- Mushroom compost
- Ash from sunflower hulls

*CONTD...*

- ◎ **For soil nitrogen increase:** Composted mushroom manure, blood meal, feather meal, dried blood with wood chip mulching (high carbon source)
- ◎ **For potassium increase:** Wood ashes
- ◎ **For Phosphorus increase:** Rock phosphate
- ◎ **For better plant growth & resistance to pests & diseases:** Sea weed extract
- ◎ **Biofertilizer innoculation:** Fixing atmospheric nitrogen
- ◎ **For increasing soil organic matter:** Growing green manure crops between two crops

Simone *et al.* (2001)

## *CONVERSION PERIOD*

1. Definition: Time between the start of organic management and cultivation of crops or animal husbandry.
2. Whole farm including the live stock
3. All standard requirements should be met during the conversion period
4. If not the whole farm, two must be separated & inspectible.
5. Regular inspection is must during conversion period
6. Simultaneous production of conventional or in conversion and / or organic which cannot be distinguished are not allowed.
7. Full conversion is not required where organic systems are already in use. But, this has to be verified by inspection agency.

## **8. Maintenance of organic management**

- ⊙ Organic certification is based on continuance
- ⊙ Maintained on a long term basis
- ⊙ Shall not be switched back to conventional farming
- ⊙ Contribute to ecosystem beneficially
- ⊙ Linked to facilitate biodiversity are
  - Extensive grassland
  - Not heavily manured to land not under rotation
  - Pastures, meadows, orchards, hedges, hedgerows
  - Ecologically rich fallow land and arable land
  - Ecologically diversified field margins
  - Water ways, pools, springs, ditches, wetland, swamps

# SOIL AMENDMENTS

- Products for use in fertilization and soil conditioning in organic farming

Items	Conditions for use
<b>1. Material from plant and animal origin</b>	
<b>Matter produced on an organic farm unit</b>	
• Farmyard and poultry manure, slurry, urine	Permitted
• Crop residues and green manure	Permitted
• Straw and other mulches	Permitted
• Composts and vermicompost	Permitted

Items	Conditions for use
<b>Matter produced outside the organic farm unit</b>	
• Blood meal, meat meal, bone meal and feather meal without preservatives	Restricted
• Compost made from plant residues and animal excrement	Restricted Restricted
• Farmyard manure, slurry, urine	Restricted
• Fish and fish products without preservatives	Restricted
• Guano	Restricted
• Human excrement	Restricted
• Wood, bark, sawdust, wood shavings, wood ash, wood charcoal	Prohibited
• Straw, animal charcoal, compost and spent mushroom and vermiculate substances	Restricted
• Compost from organic household	Restricted
• Compost from plant residues	Restricted
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## 2. By products from the industries

**By-products from the food and textile industries of biodegradable material of microbial, plant or animal origin without any synthetic additives**

- By products from oil palm, coconut and cocoa (including fruit bunch, palm oil mill effluent, cocoa peat and empty cocoa pods).

Restricted

- By-products of industries processing ingredients from organic agriculture

Restricted

- Extracts from mushroom, chlorella, fermented product from *Aspergillus*, natural acids (vinegar)

Restricted

### 3. Mineral origin

• Basic slag	Restricted
• Calcareous and magnesium rock	Restricted
• Lime, limestone, gypsum	Permitted
• Calcified sea weed	Permitted
• Calcium chloride	Permitted
• Mineral potassium with low chlorine content (e.g. Sulphate of potash, kainite, sylvinite, patenkalli)	Restricted
• Natural phosphates (rock phosphate)	Restricted
• Trace elements	Permitted
• Sulphur	Permitted
• Clay (bentonite, perlite, zeolite)	Permitted

### 4. Microbiological origin

• Bacterial preparations (biofertilizers)	Permitted
• Biodynamic preparations	Permitted
• Plant preparations and botanical extracts	Permitted