



FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

Crop rotation and its principles

The crop rotation is stated as growing one crop after another on the same piece of land and on different timings (seasons) without impairing the soil fertility. Successful crop husbandry depends on the choice of right crop on the right soil.

Principles of crop rotation

The basic principles of crop rotations are as follows:

- Deep rooted crops should be succeeded by shallow rooted crops such as cotton, castor, pigeon pea-potato, lentil, green gram etc.
- Dicot crops should be rotated by monocot crops such as mustard, potato-rice, wheat- sugarcane.
- Leguminous crops should be succeeded by non-leguminous crops and vice versa (green gram- wheat).
- Exhaustive crops should be succeeded with restorative crops such as potato, sorghum, sugarcane, castor- sunhemp, black gram, cowpea.
- Grain crops should be followed by foliage crops such as, wheat-dhaincha, black gram.
- Long duration crops should be succeeded by short duration crops such as sugar cane, napier, Lucerne- cowpea, black gram, ground nut.
- Crops susceptible to soil borne pathogens and parasitic weeds should be followed by tolerant trap crops such as sugarcane-marigold, mustard (for nematodes); tobacco-rice, pulses (for orobanche); pearl millet- castor (for striga); lucern, berseem-oats (for cuscuta).
- Crops with problematic weeds should be followed by clean crops/ multi cut crops and other dissimilar crops such as wheat-puddle rice for *Phalaris minor*; berseem- potato for *Chicorium intybus*; rice-vegetables for *Echinochloa crusgalli*
- Heavy irrigation and intensive labour requiring crops should be followed by less water and labour requiring crops such as sugarcane, paddy-mungbean and sesame.

Advantages of crop rotation

Following are the advantages of an appropriate crop rotation:

- Higher yield without incurring extra investment.
- Enhance soil fertility and microbial activity.
- Avoid accumulation of toxic substances.
- The legumes in a cropping system, assimilating nitrogen from the atmosphere and enriching the soil with their root system.
- Better utilization of nutrients and soil moisture.
- Insurance against natural devastation.
- Maintain soil health by avoiding insect pest, diseases and weed problems.
- Provide proper labour, power and capital distribution throughout the year.
- Higher chances to provide diversified commodities.
- Slow but steady income, which is beneficial to marginal and small farmers.
- Deep rooted crops work the soil below plough layer.