## Exercise No. 1

## Classification of Field Crops

Field crops include those plants grown for food, feed, fiber or industrial purposes. Agronomically, crop is a plant cultivated for economic purpose.

### Classification of crops

Classification is done to generalize similar crop plants as a class for attaining better understanding of them. Field crops are classified in the following ways.

**(1) Classification of field crops according to use**

- **Cereal crops** belong to member of the grass family (*gramineae*) and grown for the purpose of food and feeds. E.g. corn, wheat, rice, grain sorghum, barley oat and rye.
- **Pulse crops** belong to member of legume plant family (*Papilionaceae*). These crops are rich in protein. Important legumes grown for their edible seeds are peanut, field bean, garden pea, lentil, cowpea etc.
- **Forage crops** include grasses and legumes grown for feeding animals which are used in the form of silage, hay and green fodder. Forage crops include corn, sorghum, oat, barley and various low-growing pasture grasses.
- **Root crops** have a high starch content. Crops grown for their edible roots or root parts. E.g. sweet potato, beet and turnip.
- **Fiber crops** are important for their fibrous parts. The textile industry uses raw materials from fiber crops for the purpose of clothing, rope, twine and other fiber related products. E.g. cotton, flax and hemp.
- **Sugar crops** are a raw source for sugar. Important sugar crops are sugar beet, sugarcane, sweet sorghum etc.
- **Oilseed crops** are important for their high oil content. Soybean, cotton (cotton seed), flax, peanut, sunflower etc. are important oil seed crops.
- **Stimulant crops** include tobacco, coffee and tea.
- **Fruit and vegetable crops** supply humankind with a force of valuable vitamins and nutrients. These crops are not considered as a field crops. Fruit crops such as apple, peache, plum, pear, citrus etc. Vegetable crops include tomato, lettuce, onion, cabbage, brinjal (eggplant) etc.

- **Timber crops** (industrial crops) are an important material used for construction purposes. Timber crops include pine trees and many varieties of hardwoods produced specifically for timber harvesting. E.g. teak, shisham, babul etc.

(2) **Classification of field crops according to special uses**

- **Green-manure crops**: Ploughing green plant tissues grown in the field or adding green plants with tender twigs or leaves from outside and incorporating them into the soil for improving the physical structure as well as fertility of the soil. E.g. dhaincha, sun hemp, green gram, black gram etc.
- **Cover crops**: Planted to protect the soil against wind and water erosion and minimize the loss of soil nutrients and water. E.g. clovers, guinea grass, napier grass, green gram, black gram rye, vetch, oat, wheat, and seasonal grasses.
- **Emergency (catch) crops**: Quick growing and short duration crops planted to replace other crops that have failed. E.g. millets, green gram, black gram, safflower etc.
- **Green-chop crops**: Crops that are cut and fed directly to livestock. Green-chop crops include sorghum, alfalfa, maize, berseem etc.
- **Silage crops**: Produced for animal feeding purposes are harvested and allowed to pass through stages of partial fermentation. Silage crops are corn, sorghum, cowpea, clover etc.

**(3) Classification of field crops according to season**

- **Warm season crops**: These crops require warm temperatures for growth and grow during the spring and summer. E.g. maize, rice, sorghum, sudan grass, cotton, peanut, sesame, sunflower etc.
- **Cool (winter) season crops**: These crops require cool temperatures for optimal growth and grow during winter. These crops are very tolerant to cool temperatures. E.g. wheat, barley, oat, berseem, pea etc.

(4) **Classification of field crops according to life span**

- **Annual crops**: Crops of this category complete their entire life cycle from seed to seed in a single growing season and then die. E.g. rice, wheat, barely, maize, sorghum, faba bean, lentil, chickpea, linseed, soybean, sesame, sunflower, safflower etc.
- **Biennial crops**: These crops complete their life cycle in two seasons. Vegetative growth occurs during the first season and second season, the green plants give flowers and seeds. E.g. sugar beet, onion, sweet clover etc.

- **Perennial crops:** These crops are grown for more than two years (they can persist for more than two years). They may either produce seed or not every year. They do not die after reproduction but continue to grow indefinitely from year to year. E.g. sugarcane, white clover, alfalfa etc.

**(5) Use of the binomial classification system in naming plants**

**Monocotyledons** and **dicotyledons** are two classes of angiosperms that include the seed-producing plant families.

- **Monocotyledon plant** has a single cotyledon or seed leaf.
  - Monocot plants include the grass family (*Gramineae*) consisting of all cereal crops and about three-fourths of cultivated forage crops. Two important monocotyledon families are:
  - The grass family (*Gramineae*) includes millet, corn, wheat, barley, sorghum, rice, oat and other cereal grains.
  - The lily family (*Liliaceae*) includes lilies, onions, tulips, and garlic.
- **Dicotyledon** seed has two cotyledons or seed leaves.
  - *Fabaceae*: includes: bean, pea, peanut, alfalfa, clovers and soybean.
  - *Solanaceae*: includes: white potatoe, tobacco, pepper and eggplant.
  - *Brassicaceae*: includes: turnip, cabbage, cauliflower, radish and mustard.
  - *Convolvulaceae*: includes: morning glories, sweet potatoe and dodder.
  - *Malvaceae*: includes: cotton and okra.
  - *Rosaceae*: includes: ornamental roses, peach, almond, apricot, pear, apple and plum.