

## Plant Identification: Characters and Methods

### Characters Considered Before Plant Identification:

- i. Whether a plant is herbaceous or woody, and annual or perennial in nature.
- ii. Whether or not milky or coloured sap is present in the leaf, stem or other plant parts.
- iii. The leaf type, phyllotaxy, and venation.
- iv. Presence or absence and type of stipule on young shoots.
- v. The distribution and kinds of surface coverings (i.e. hairs, trichomes, spines, etc.).
- vi. The parts of the flower and the number of sepals and petals, whether separate or fused, and also their arrangement i.e. aestivation.
- vii. Whether perianth is present in one or more series, or absent.
- viii. Whether pappus (e.g. Asteraceae) or epicalyx (e.g. Malvaceae) or similar structures are present.
- ix. Whether a nectar-secreting disc is present in the flowers (e.g. Rutaceae).
- x. Whether the flowers are actinomorphic or zygomorphic.
- xi. The number and attachment of stamens and if there is any fusion of anthers or filaments.
- xii. The number of pistils, styles and stigmas of the gynoecium, observation of a transverse section of the ovary, the number of locules, number of ovules per locule, and also the placentation.
- xiii. The position of the ovary and fusion of the perianth by observing a longitudinally cut section of the entire flower through its centre.

### Plant Identification Methods:

#### The methods of identification include the following:

##### (a) Expert Determination:

The best method of identification is expert determination in terms of reliability or accuracy. In general the experts have prepared treatments (monographs, revisions, synopses) of the group in question, and it is probable that the more recent floras or manuals include the expert's concepts of taxa.

Experts are typically found in botanical gardens, herbaria, museums, colleges, universities, etc. However, although of great reliability, this method presents problems of requiring the valuable time of experts and creating delays for identification.

##### (b) Recognition:

It approaches expert determination in reliability. This is based on extensive, past experience of the identifier with the plant group in question. In some groups this is virtually impossible.

**(c) Comparison:**

A third method is by comparison of an unknown with named specimens, photographs, illustrations or descriptions. Although this is a reliable method, it may be very time consuming or virtually impossible due to the lack of suitable materials for comparison. The reliability is, of course, dependent on the accuracy and authenticity of the specimens, illustrations, or descriptions used in the comparison.

**(d) The Use of Keys and Similar Devices (Synopses, Outlines, etc.):**

This is by far the most widely used method and does not require the time, materials, or experience involved in comparison and recognition.

**Annuals**

Annuals are plants that complete their life cycle in one year. They germinate, grow, bear fruits and die off within an year. Generally, all herbs and plants belonging to the grass family exhibit this type of life cycle. Mustard, watermelon, corn, lettuce wheat, are a few examples of annual plants.

**Lifespan of Rice Plant**

Rice is a type of grass and is the staple food for millions of people across the world. It is an annual crop with an average lifespan of 4 – 8 months. It goes through three main stages before it is harvested – vegetative stage, reproductive stage and ripening stage.

**Biennials**

Biennials are plants that complete their life cycle in two years. They germinate, develop a root system, stem and leaves in the first year. Later in their second year, they yield flowers and bear fruit. A few herbs are also classified as biennials, including spinach. Along with spinach and other herbs, biennials also include carrot, cabbage, petunias radish, onions, etc.

**Perennials**

Perennials are plants which complete their life cycle in more than two years. Once they grow, they start to bear flowers, produce fruits, seeds and the cycle continues for a longer period of time. They do not die after bearing fruits but renew their parts, season after season. Along with a few shrubs,

trees are all classified into perennials. For Eg., tomatoes, ginger, banana, mango, coconut, palm, banyan, etc.

**Do annuals plants come back every year?**

No, annuals do not come back every year. Perennials come back every year growing from the roots that survive through winters.

**What are herbaceous plants?**

Herbaceous plants are the plants with green and soft stems. These can produce flowers and fruits in a very short period of time.

**Is onion annual or biennial plant?**

Onion is a biennial plant. They germinate and grow their bulb in the first year. They are then harvested. If they are left on the ground, they become dormant during winters and sprout again during spring.

**Give a few examples of herbaceous biennials.**

- Carrot
- Parsnip
- Ragwort

**KEEP POT CLEAN OTHERWISE FAMILY GET SICK**

**K**-Kingdome

**P**-Phylum

**C**-Class

**O**-Order

**F**-Family

**G**-Genus

**S**-Species