

Plant Nomenclature and Taxonomy

Dr. Qays M. Issa

The Relationship Between Taxonomy and Pharmacognosy

Plant taxonomy has a basic and direct relationship with pharmacognosy. Plant taxonomy is used to identify, document, and examine plants to ensure the safety and efficacy of drugs derived from them. It also aids in the discovery of new therapeutic compounds by predicting plant characteristics and their relationship to known species, making taxonomy a cornerstone of pharmacognosy.

The Relationship Between Plant Taxonomy and Pharmacognosy can be highlighted as follows:

1. Therapeutic classification.
2. Discovery of new drugs.
3. Extraction and biological evaluation.
4. Study of active ingredients.
5. Identification and standardization.

What is Plant Taxonomy ?

Plant taxonomy is the branch of biology that deals with **(Find , Description , Identification , Nomenclature , and Classification)** of plants , based on their similarities and differences with other species. It involves naming and placing plants in the same group based on their physical characteristics , evolution , and genetics.

It's history dates back to the time of the Latin language in Europe, or perhaps to the time of Theophrastus (287- 371 BC). He was the first to try to classify plants, based on their shapes and growth methods.

Taxa :

Taxa are taxonomic units are used to group organisms based on common characteristics.

Description:

It is a process of providing a detailed description of all parts of a plant, including : roots, stems, leaves, flowers, and fruits. In addition : Plant height, growth pattern, branching pattern .. etc..

Identification:

It is correct botanical identification of plant species, which is essential for the safe use of natural botanical health products, and includes methods for verifying the correct species, variety.

Nomenclature:

Nomenclature refers to naming plants based on standardized rules like the International Code of Botanical Nomenclature (ICBN). It involves electing specific names to genera , species , and other taxonomic groups using binomial nomenclature .

Botanical nomenclature is the formal standardized system of naming plants.

The most important event in the development of this system was the adoption by **Carl Linnaeus** (1707-1778) of the binomial nomenclature system. He authored the book (**Systema Naturae**), in which he laid the foundations for modern scientific classification, which includes the genus name and the species name.

Now, Botanical Nomenclature has **2** components, the **first** name represents the **Genus** (the name begins with a **capital letter)**, the **second** name identifies the **Species** and is written in **lowercase**, and the entire name is **italicized** or **underlined**.

Binomial Nomenclature is important due to there are millions of organisms distributed all over the world that have different names, as this can cause confusion when trying to identify or classify them. Therefore, use Binomial Nomenclature became the ideal solution to this problem.

Classification:

Classification refers to organizing and categorizing organisms into taxa based on shared characteristics and evolutionary relationships. It aids in studying and understanding the relationships among different organisms and their evolutionary history.

Aims of Plant Taxonomy

- To provide an index of plant taxa for local, regional or continental needs.
- To found suitable method for identification, nomenclature and description of plant taxa.
- Classification of organism into classes, Order, Families, Genera, and species
- To provide valuable information about : wild , medicinal plant species , endangered species , unique plants , genetic , and ecological diversity

Carrolus Linnaeus was first adopted the hierarchy system of taxonomy in 1753. The sequence groups are as follow:

Species : is the fundamental unit in taxonomy

Genus : is the closely related species

Family : is the closely related genera

Order : is the closely related families

Class : is the closely related order

Division : is the closely related classes

Kingdom : is the closely related Division

TAXONOMIC HIERARCHY

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SPECIES

GENUS

FAMILY

ORDER

CLASS

PHYLUM

KINGDOM

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Scientific classification of common Turmeric

Kingdom : Plantae
Division : Angiosperms
Class : Liliopsida
Order : Zingiberales
Family : Zingiberaceae
Genus : Curcuma
Species : longa

Binomial name : *Curcuma longa*
or : Curcuma longa

Thanks for your listening

