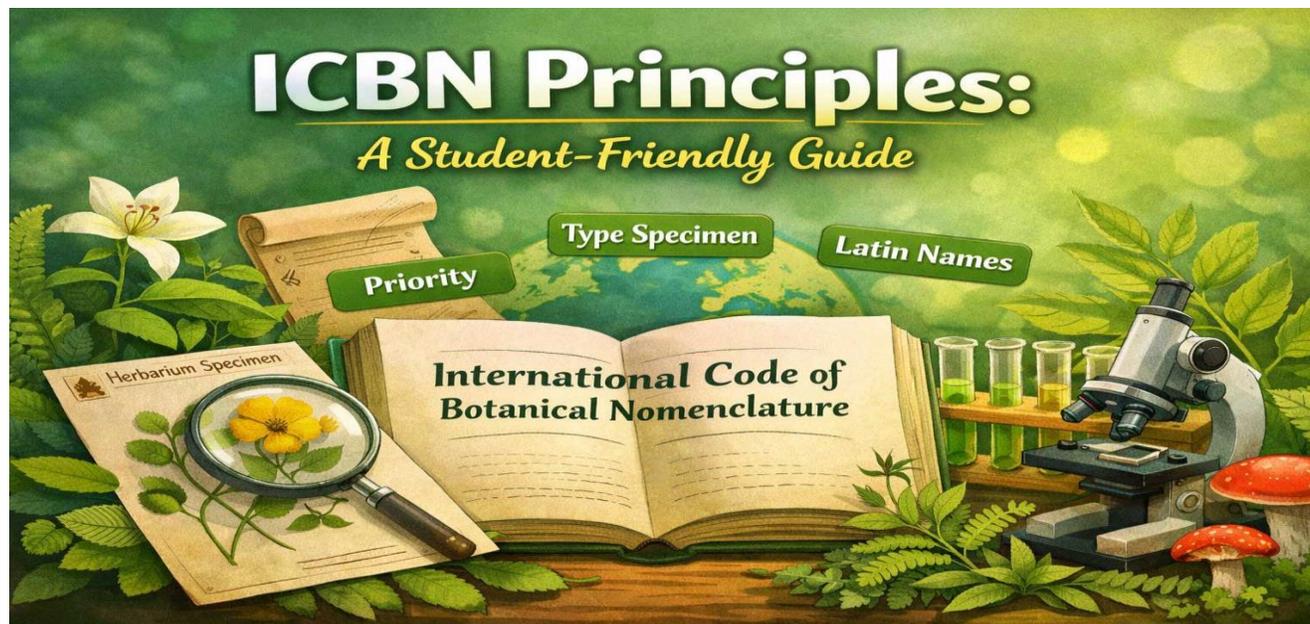


ICBN Principles Explained for Botany Students



If you have ever wondered why plant names such as *Mangifera indica* or *Rosa alba* look universal and structured, the answer lies in **ICBN Principles**. The **International Code of Botanical Nomenclature** provides the rules that regulate plant naming worldwide. Therefore, understanding these principles is essential for every UG Botany student. Today, the Code is published as the International Code of Nomenclature for algae, fungi, and plants. However, the foundational ideas remain the same.

■ Definition

ICBN Principles are six fundamental guidelines that form the philosophical foundation of the International Code of Botanical Nomenclature. These principles ensure stability, uniformity, and clarity in naming plants, algae, fungi, and related organisms across the world.

Structure of ICBN and Its Components

The Code is organized into three main divisions.

1 Principles

These provide the theoretical base of botanical naming. They guide all decisions in taxonomy.

2 Rules and Recommendations

- **Rules are mandatory.** Names that violate them cannot be accepted.
- **Recommendations are advisory.** They promote uniformity but are not compulsory.

3 Provisions for Governance

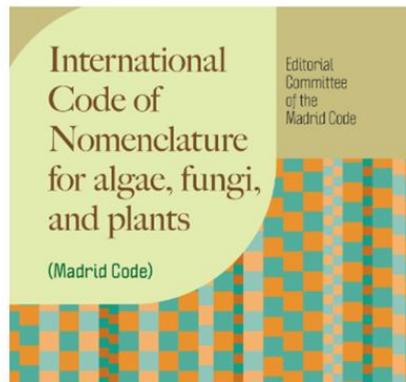
These explain how the Code is interpreted and updated during International Botanical Congress meetings.

In addition, the Code contains appendices that list **conserved names**, **rejected names**, **hybrid names**, and **suppressed publications**.

INTERNATIONAL CODE OF NOMENCLATURE FOR ALGAE, FUNGI, AND PLANTS (MADRID CODE)

Accepted by the Twentieth International Botanical Congress, Madrid,
Spain, July 2024

**Latest
ICBN Code**



ICBN Code 2025 (Madrid Code)

How ICBN Functions Internationally?

The functioning of the Code is systematic and democratic.

- Amendments are proposed during **International Botanical Congress** meetings.
- Experts discuss and vote on suggested changes.
- A revised edition of the Code is then published.

Each edition replaces the previous one. For example, the latest edition is known as the Madrid Code 2025.

A plant name is changed only when:

- New research justifies revision
- The name violates rules
- Priority demands correction

Thus, stability remains the primary goal.

ICBN Principles: Detailed Explanation with Examples

The following six ICBN Principles are extremely important for examinations. Each principle is stated exactly, followed by a simple explanation.

Principle 1 – Independence from Zoology

“Botanical Nomenclature is independent of Zoological Nomenclature. The Code applies equally to the names of taxonomic groups treated as plants whether or not these groups were originally so treated.”

Explanation: Plant naming rules are separate from animal naming rules. Even if an organism was previously classified differently, botanical rules apply if it is treated as a plant.

Example: The genus *Morus* is used for mulberry plants in botany (family Moraceae) and also for gannet birds in zoology (family Sulidae), showing that botanical and zoological nomenclature are independent systems governed by different codes. Fungi follow botanical naming rules, not zoological ones.

Principle 2 – Typification (Core of ICBN Principles)

“The application of names of taxonomic groups is determined by means of nomenclatural types.”

Explanation: Each scientific name is permanently attached to a type specimen. Usually, this specimen is preserved in a herbarium. Therefore, the type fixes the name.

Example: If confusion occurs about *Rosa indica*, taxonomists examine the original type specimen. The specimen determines the correct application of the name.

Principle 3 – Priority of Publication

“Nomenclature of a taxonomic group is based upon priority of publication.”

Explanation: The earliest validly published name is accepted as the correct one. Later names become synonyms.

Example: If two scientists describe the same plant differently, the first valid publication has priority. This rule prevents unnecessary renaming.

Principle 4 – One Correct Name Rule

“Each taxonomic group with a particular circumscription, position and rank can bear only one correct name, the earliest that is in accordance with the rules.”

Explanation: At any given rank, only one correct name is allowed.

Example: The sunflower family is correctly called *Asteraceae*. Although *Compositae* exists as a traditional name, *Asteraceae* follows rule-based formation. This ensures international uniformity.

Principle 5 – Latinization of Scientific Names

“Scientific names of taxonomic groups are treated as Latin, regardless of derivation.”

Explanation: Scientific names are grammatically treated as Latin words. This applies even if the origin is English, Sanskrit, or Chinese.

Example: *Ginkgo* and *Vanda* are treated as Latin names in scientific usage. Thus, Latin provides universal consistency.

Principle 6 – Retroactivity of Rules

“The rules of nomenclature are retroactive, unless expressly limited.”

Explanation: The rules apply to previously published names unless the Code clearly restricts application.

Example: If an old name violates modern rules and no exception exists, it must be corrected. Therefore, historical names remain aligned with current standards.

Why ICBN Principles Are Important for UG Students

Understanding ICBN Principles helps you:

- Interpret synonyms in floras
- Understand typification clearly
- Answer competitive exam questions
- Handle herbarium specimens confidently



Conclusion

In summary, ICBN Principles form the backbone of botanical nomenclature. They ensure stability, clarity, and global uniformity in plant naming. If you clearly understand priority, typification, and the one correct name rule, you have mastered the foundation of plant taxonomy.

Understanding ICBN Principles is not only important for exams but also essential for becoming a confident taxonomist.

MCQs on ICBN Principles

1. Which principle of ICBN ensures that the earliest validly published name is accepted?

- A. Typification
- B. Retroactivity
- C. Priority of publication
- D. Latinization

Answer: C. Priority of publication

2. The scientific name of a plant is permanently attached to:

- A. A published description
- B. A herbarium label
- C. A nomenclatural type specimen
- D. A botanical illustration

Answer: C. A nomenclatural type specimen

3. According to ICBN Principles, scientific names are treated as:

- A. Greek words
- B. Latin words
- C. English technical terms
- D. Regional scientific terms

Answer: B. Latin words

4. Two botanists independently describe the same species in 1890 and 1895 using different names. Both publications are valid. According to ICBN Principles, which name is correct?

- A. The name with wider usage
- B. The name published in 1895

- C. The name that follows Latin grammar strictly
- D. The name published in 1890

Answer: D. The name published in 1890

5. If an organism was originally described as an animal but is later treated as a plant, which nomenclature rules apply?

- A. Zoological Code permanently
- B. Both Zoological and Botanical Codes
- C. Botanical Code only
- D. The Code used at the time of first publication

Answer: C. Botanical Code only

6. An old plant name published in 1820 violates a current rule of nomenclature. No exception is provided in the Code. What action should be taken?

- A. Retain the name due to historical importance
- B. Reject the rule because it is modern
- C. Correct the name according to current rules
- D. Use both old and new names simultaneously

Answer: C. Correct the name according to current rules

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