

COURSE CODE: *BOT 423*

COURSE TITLE: *Economic Botany*

NUMBER OF UNITS: *2 Units*

COURSE DURATION: *2 Hours per week*

COURSE DETAILS:

Course Coordinator: Prof M.S. Ayodele

Email:

Office Location: B210, COLNAS Building

Other Lecturer:

COURSE CONTENT:

The origin, history, sources, taxonomy, morphology and cultivation of Nigeria economic plant species (food, fibre, medicinal, forage, cereals, timber etc.)

COURSE REQUIREMENTS:

The course is compulsory for all 400 level students of Botany option of the Biological Sciences Department. The students are expected to attend and participate fully in all the theory and practical classes with not less than 70% attendance.

READING LIST:

LECTURE NOTES

Amplified Synopsis

1. BOTANY defined or explained
2. Economic plant defined or explained
3. Examples and Classification of economic plant species available in Nigeria
4. The Origin, History and Sources of Nigeria economic plant species
5. Morphology and Taxonomy of Nigeria economic plant species
6. Cultivation of Nigeria economic plant species (Extensive and Intensive)

1. **Botany** is the field of basic science dealing with the study and inquiry into the form, function, development, diversity, reproduction, evolution, and uses of plants and their interactions within the biosphere. It also includes the investigation of their uses and other parameters of importance wherever found. Such parameters don't have to be only positive from man's point of view.

2. **Economic Botany** would therefore, be the study of plants of economic value. A plant is considered to be of **economic** value either by virtue of its usefulness in whatever form, or by its negative attributes militating against other factors affecting man or the ecosystem generally. For instance, a plant which constitutes some nuisance poses some economic hazard from the point of view of the cost of keeping such plants under control! Simply put, Economic Botany is the interaction of people with plants.

3. Examples and Classification of Economic Plant Species available in Nigeria

Plant classification is desirable for better understanding and appreciation of the numerous plants found growing everywhere. It also assists in memory preservation of knowledge on the identity of each plant. However, a classification of plants that will hold under all conditions is hardly possible. Many plants are used for a number of varied purposes and different uses are continually evolved for different plants so much that some formally inconspicuous plants become promoted because of their discovered essential use(s). Nevertheless, plants are grouped from two major lines of focus namely: - **Botanical** standpoint and **Agronomic** standpoint.

Botanical Classification

Seedless and Seed plants (**Spermatophytes**) are subdivisions of the plant kingdom. The latter are plants reproduced by seeds – **Gymnosperms** and **Angiosperms**. Most of the plants grown for food or other economic use (i.e. crops) fall under the angiosperms. The seeds of angiosperms are enclosed in an ovary as opposed to the 'naked' seeds of gymnosperms. Angiosperms are the best known of the earth's vegetation with over 180,000 species reported. There are two main subclasses of angiosperms, **monocotyledons** (grasses, including cereals and sugarcane) and **dicotyledons**. From previous studies in Plant Taxonomy, each of the subclasses is further divided into orders, families, genera, species and varieties. There are specific parameters of character similarities for delimitation into such groups.

Agronomic Classification

Plants are classified according to the products from the plant and or their use, rather than any form of character similarity. There are Cereal crops, Roots, Tuber, Grain legumes, Vegetables, Sugar crops, Forage, Fruit crops, Oil crops, Nut crops, Rubber, Timber or Tree crops, Fibre crops, Spices and stimulants. A broader classification contract the groups as Food crops, Tree crops, Fibre, Forage, Cereals, Medicinal and Timber crops. A particular crop may recur under more than one of these broad groups. Crops are generally used as food or raw materials for the industries which provide processed foods of different kinds. In recent times, awareness is gaining ground on the medicinal import of some plants. Hence another concise grouping of plants include: FOOD, INDUSTRIAL and MEDICINAL crops.

4. **Take-home Group Assignment:** Generate a list of plants for the different groupings, starting with the

very concise group. The Table below is of help:-

5. Origin, History and Sources of Nigeria economic plant species

FOOD CROPS				
<i>Group members</i>	<i>Examples</i>	<i>Origin/History</i>	<i>Sources</i>	<i>Remarks</i>
Cereals				
Tubers				
Roots				
Vegetables				
Spices /Stimulants				
TREE CROPS				
Fruit Trees				
Timber				
Poles				
FIBRE CROPS				
Herbs				
Shrubs				
Pseudo Stems				
FORAGE CROPS				
Grasses				
Other Herbs				
Shrubs				
Trees				
MEDICINAL PLANTS				
<i>Group members</i>	<i>Examples</i>	<i>Origin/History</i>	<i>Sources</i>	<i>Remarks on uses</i>
Herbs				
Shrubs				
Trees				
Lianas				

6. Plants and industries: List some major industries in Nigeria which use plants as raw materials. Enclose in the list the type of plant materials/products used in such industries and their products commonly sold in Nigerian markets and elsewhere. **(This is an individual Take-home assignment).**

7. Make a general revision of BOT 324: Plant Taxonomy and Biosystematics and apply the principles to plants in your groupings in 5. above.

8. Term Paper: **Cultivation of Nigeria economic plant species – a brief summary**