



كلية العلوم

القسم : علم الحياة

السنة : الرابعة

المادة : البيولوجيا النباتية

المحاضرة : الاولى / نظري / د. ميسون

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يمكنكم طلب المحاضرات برسالة نصية (SMS) أو عبر (What's app-Telegram) على الرقم 0931497960

Botany

All living things owe their existence to green plants that harness energy from the Sun.

That's right, all the chemical energy organisms use on Earth, except for a few rare and funky exceptions, is harnessed by plants.

So if we want to understand how energy from the Sun becomes food and fuel for all the rest of us, we will need to study botany.

“Botany is the branch of Biology that deals with the study of plants.”

To be clear, botany involves much more than just understanding how plants harness energy from the Sun.

Humans have been studying plants for as long as there have been humans.

These studies have their roots, in agriculture and herbalism, when our ancestors learned which plants were useful for nutritional and medicinal purposes.

It was only much later that the field grew to become what we now know of as **botany**, sometimes also referred to as **phytology**,

when people became more interested in plant taxonomy, or the description of plant species and their classification into different groups of relatedness.

BRANCHES OF BOTANY

During the 19th and 20th centuries Botany progressed rapidly accumulating knowledge on various aspects of plant life.

It is divided into different specific branches to facilitate an easy study. Some of them are outlined here:

1. Morphology: It deals with the study and description of different organs of plant. Morphology is divided into two parts.

a) External Morphology: It is the study and description of external characters of plant organs like root, stem, leaf, flower, fruit, seed etc.

b) Internal Morphology: It is the study of internal structure of different plant organs. It has two branches.

- **Histology** : It is the study of different tissues present in the plant body.

- **Anatomy** : It deals with the study of gross internal details of plant organs like root, stem, leaf, flower etc.

2. Cytology (or) Cell Biology : It is the study of structure and functions of cell and cell organelles and their multiplication.

3. Embryology : This branch deals with the study of development of male and female gametophytes, formation of gametes, process of fertilization, development of embryo, endosperm and seed.

4. Palynology : The study of the development, structure, and all other aspects related to microspores or pollen grains is called Palynology.

5. Plant Taxonomy : It deals with the identification, nomenclature and classification of plants into related groups on the basis of information obtained from different fields of Botany.

6. Plant Physiology : This branch deals with the study of different vital activities of plants like absorption of water and minerals, photosynthesis, respiration, nitrogen metabolism, growth etc.

7. Plant Ecology : It is the study of reciprocal relationship between the plants and the environment in which they are living.

8. Palaeobotany : It deals with the study of fossil plants. It helps us in understanding the course of evolution in plants.

9. Genetics : This branch deals with all aspects related to genes such as their structure, synthesis, inheritance, mutations etc.

10. Phytogeography : It is the study of distribution of plants in different parts of the globe during the past and present periods of time.

11. Phycology : It is the study of all aspects related to algae, which are chlorophyllous and autotrophic thallophytes.

12. Mycology : It deals with the study of fungi which are non-chlorophyllous, heterotrophic thallophytes.

13. Lichenology : It is the study of lichens which are a special group of plants in which an algal member and a fungal member live together as symbionts. They mostly grow on rocks.

14. Pomology : Study of fruits and fruit yielding plants.

15. Anthology : Study of flowers.

16. Agrostology : Study of grasses or lawns.

17. Dendrology or xylology : Study of shrubs and trees.

18. Dendrochronology : Deteremination of age of the trees by counting annual rings.

19. Phenology : Study of seasonal changes in plants..

Importance of Botany

The importance of Botany can be understood by the following points:

1. Botany deals with the study of different kinds of plants, its uses and characteristics to influence the fields of science, medicine and cosmetics.
2. Botany is the key to the development of biofuels such as biomass and methane gas that are used as alternatives to fossil fuels.
3. Botany is important in the area of economic productivity because it is involved in the study of crops and ideal growing techniques that helps farmers increase crop yield.
4. The study of plants is also important in environment protection. The Botanists list the different types of plants present on earth and can sense when the plant populations start declining.

Vocabulary

Morphology علم الوصف النباتي , **Histology** علم الأنسجة , **Anatomy** علم التشريح , **Cytology** علم الخلية , **Embryology** علم الأجنة , **Plant Taxonomy** علم التصنيف النباتي , **Plant Physiology** علم الطلع والأبواغ , **Palynology** علم البيئة النباتية , **Plant Ecology** الفيزيولوجيا النباتية , **Palaeobotany** علم النباتات القديم , **Genetics** علم الوراثة , **Phytogeography** علم الجغرافيا النباتية , **Phycology** علم ذاتية التغذية , **Mycology** علم الفطريات , **Lichenology** علم الأشنات , **Pomology** علم الفاكهة , **Antheology** علم الأزهار , **Agrostology** علم الزراعة , **Dendrology or xylology** علم الأشجار الحراجية , **Dendrochronology** علم دراسة التسلسل الزمني من خلال الأشجار , **Phenology** علم مراحل نمو النبات .

Wishing you the best of luck

Engr. Maissoun Ziadeh

Vocabulary - Lecture1

مفردات المحاضرة الأولى

Owe	تدين	Absorption	الامتصاص
Existence	وجود	Photosynthesis	التركيب الضوئي
Harness	تقتنص	Respiration	التنفس
Fuel	وقود	Metabolism	التمثيل الغذائي
Botany	علم النبات	Reciprocal Relationship	العلاقات المتبادلة
Ancestors	أسلاف	Environment	البيئة
purposes	أغراض	fossil plants	النباتات الأحفورية (المستحاثات)
Taxonomy	تصنيف	Course	مسار
Description	وصف	Synthesis	اصطناع
Classification	تصنيف	Inheritance	وراثة
Accumulating	مراكماً	Mutations	الطفرات
Aspects	النواحي	Distribution	توزيع
Specific branches	فروع محددة	The Globe	العالم
To Facilitate	لتسهيل	Periods	فترات
Outlined	موجزة	Algae	الطحالب
Deals with	تتعامل مع	Autotrophic	ذاتي التغذية
Divided	تنقسم	Thallophytes	النباتات المشربة
External Morphology	الشكل الخارجي	Fungi	الفطريات
Internal Morphology	الشكل الداخلي	Heterotrophic	غيرية التغذية
Characters	الصفات	Lichens	الأشنات
Structure	بنية	Symbionts	متعايش
Gross	إجمالي	Yielding	غلة - إنتاجية
Organelles	العضيات	Lawns	المروج
Multiplication	التضاعف	Shrubs	الشجيرات
Development	تطور	Deteremination	تحديد
Gametophytes	الأمشاج	Influence	تأثير
Formation	تشكيل - تكوين	Cosmetics	تجميل
Fertilization	الإخصاب	Biofuels	الوقود الحيوي
Embryo	الجنين	Biomass	الكتلة الحيوية
Endosperm	السويداء	Alternatives	بدائل
Microspores	الأبواغ الصغيرة	Fossil Fuels	الوقود الأحفوري
Pollen Grains	حبوب اللقاح	Economic	اقتصادي
Identification	التعريف	Increase	يزيد
Nomenclature	التسمية	Crop yield	غلة المحاصيل
Obtained	تم الحصول عليها	Protection	حماية
Fields	مجالات	Populations	تعداد - تجمعات
Vital Activities	الأنشطة الحيوية	Declining	تراجع



مكتبة
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