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**Department of Horticulture**

**College of Agriculture**

**University of Salahaddin**

**Subject: Medical & Aromatic Plants**

**Course Book – 3rd Stage / Spring Semester**

**Lecturer's name: Soran Swar Aziz /MSc**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Medical and Aromatic Plants** | |
| **2. Lecturer in charge** | **Soran Swar Aziz** | |
| **3. Department/ College** | **Horticulture Department / Agriculture College** | |
| **4. Contact** | **e-mail:** [**Soran.aziz@su.edu.krd**](mailto:Soran.aziz@su.edu.krd) | |
| **5. Time (in hours) per week** | **For example Theory: 2**  **Practical: 3** | |
| **6. Office hours** | **Monday 9 am to 1 pm/ Thursday 9 am to 1 pm** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | **BSc Plant Production, Salahaddin University, 2010**  **MSc Medicinal plants and functional foods, Newcastle University, England, United Kingdom, 2013)** | |
| **9. Keywords** | **Medical Plant, Aromatic Plant, Ethnobotany, Essential Oils, Secondary Plant metabolites, Phytochemicals Components, Alkaloids, Terpenoids, Phenolics. Toxic plants** | |
| **10. Course overview:**  ▪ Studying this course provides an opportunity for the students to understand the advantages and disadvantages of the medical and aromatic plants, and the differences between herbal medicine and chemical medicine. It also provides an historical background about using plants as a medicine. ▪ This course lead students to understand many aspects about medical and aromatic plants including: what are medical plant, what are toxin plants, the content of the substances in the each plant and their advantages for the human health, how they are growing, where are they growing and condition of the plant growth for some important medical plant that exist in Kurdistan. ▪ Other importance of studying this course is to understand how it is possible to improve the production of medical and aromatic plant in Kurdistan, to make them more effective than previous.  ▪ In Addition, another part of this course is understanding the methods of production such as agriculture methods and extraction methods, and choosing more appropriate method for production medical and aromatic plants  ▪ All these points make opportunities for the student to think about a perfect project to work in this subject and improve in both sides including agriculture and economic aspects to provide chance for our student and worker to work on it and improve it. | | |
| **11. Course objective:**  The aim of this course is to give the students availability to improve the term of medical and aromatic plants and give them availability to cultivate and production of these plants, also give enough information about the phytochemical components that exist in the plant which they have an effective role in the human health and agriculture projects.  Furthermore, another abject of this course understands the students in the term of toxicity of the toxic plant then their harmful effect on the human health.  Moreover, this course provides a method of production and the requirement conditions for the medical and aromatic plant conditions including: time for cultivation, type of soil, ecological condition, agriculture practise, time of harvesting, method of herb production and part used of the plant, and side effect of the medical and aromatic plants**.** | | |
| **12. Student's obligation**  The obligation of the students in this course includes attendance in the lectures and listening teachers carefully, asking about new terms in the class, preparation for the exam by studying the materials, make a report about medical and aromatic plants and present it for the other students at the class. | | |
| **13. Forms of teaching**  The form of teaching is including use of Microsoft PowerPoint at the class to present the lecture, using white board, sing data show, and give the lecture to the students by Microsoft word for each lecture. | | |
| **14. Assessment scheme**  Theory part: two exam 15 mark  Practical part: two exam 15 mark, quiz 2 mark, report and presentation 3 mark.  Total: 35+15= 50 mark‌ | | |
| **15. Student learning outcome:**  **The outcomes of this course includes:**  ▪ Understanding in the term of medical and aromatic plant.  ▪ Using these plants as a treatment in their life.  ▪ Understanding the importance of medical and aromatic plant as an economic part to improve the economy of Kurdistan and exporting our product to the markets such as locally and globally.  ▪ Understanding of the main field (range) of using medical and aromatic plants.  ▪ Understanding the classification of medical and aromatic plants.  **The new things are includes:**  ▪ Method of cultivation of medical and aromatic plant.  ▪ Method of productions.  ▪ Method of extractions.  ▪ Toxic plants and the effect.  ▪ Understanding new terms in the phytochemical compounds and their effect on the human health. | | |
| **16. Course Reading List and References‌:**  1- Bennet, H. (2012). Encyclopedia of Herbal Medicine.  2- Foster, S., & Hobbs, C. (2002). *Peterson field guide to western medicinal plants and herbs*. 3- Weiss, R., Fintelmann, V., & Weiss, R. F. (2000). *Herbal medicine* (No. Ed. 2). Georg Thieme Verlag.  4- Jackson, B. P., & Snowdon, D. W. (1990). *Atlas of microscopy of medicinal plants, culinary herbs and spices*. Belhaven Press.  5- Watson, R. R. R., & Preedy, V. R. (Eds.). (2008). *Botanical medicine in clinical practice*. CABI.  6- Small, E. (1997). *Culinary herbs* (pp. 438-456). Ottawa: NRC Research Press.  7- Hatfield, G. (2004). *Encyclopedia of folk medicine: old world and new world traditions*. ABC-CLIO.  8- Cotton, C. M. (1996). *Ethnobotany: principles and applications*. John Wiley & Sons.  9- Pal, S. K., & Shukla, Y. (2003). Herbal medicine: current status and the future.*Asian Pacific Journal of Cancer Prevention*, *4*(4), 281-288. | | |
| **17. The Topics:** | | **Soran Swar Aziz** |
| The concept of medicinal and aromatic plants, Main fields(range) of use of medicinal and aromatic plants, Classification of medicinal plant, Sources of Medicine, Methods of production of medicinal and aromatic plants. | | 2 hours  25/01/2023 |
| The importance of medicinal and aromatic plants, developing of medicinal plants, Determinants of production of medicinal and aromatic plants, | | 2 hours  01/02/2023 |
| Active substance in medicinal and aromatic plants (Secondary plant metabolite, Alkaloids, Terpenoids, Phenolics). | | 2 hours  08/02/2023 |
| Example of plant families with their properties includes ( solanaceae, fabaceae, lamiaceae, liliaceae, apiaceae, rosaceae and many other plant families). | | 2 hours  15/02/2023 |
| Active substance in medicinal and aromatic plants, Chemical analysis of aromatic and medicinal plants. | | 2 hours  22/02/2023 |
| Medicinal Plant Extracts, The purposes Medicinal Plant Extracts,Methods of extraction, Laboratory techniques for identification and testing biological activities of herbal medicines | | 2 hours  01/03/2023 |
| Agricultural, biological and chemical factors affecting quality of herbal products | | 2 hours  08/03/2023 |
| Preparation of medicinal and aromatic plants for marketing , 1- collection or harvesting of medicinal and aromatic plants, 2- Preparation for drying, 3- Drying. | | 2 hours  15/03/2023 |
| Advantage and disadvantage of drying, 4- Processing for packaging and packing, 5- Storage of medicinal and aromatic plants, Corruption (damage) of medicinal and aromatic plants stored. | | 2 hours  29/03/2023 |
| Interaction among ingredients, Biological action of herbal preparations | | 2 hours  06/04/2023 |
| Evaluation of the development of medicines from ethno-pharmacological leads | | 2 hours  10/04/2023 |
| **18. Practical Topics (If there is any)** | | **Soran Swar Aziz** |
| Historical perspective including (Sumerian, Ancient Egyptian, Ancient Indian and Ancient Chinese) medicinal plants.  Introduce to some terminologies | | 3 hours  30/01/2023 |
| Understand of ethno-botany and ethno-pharmacology, benefit of medicinal plants | | 3 hours  06/02/2023 |
| **Fabaceae family:**  Including their description, chemical content, and cultivation, traditional and modern uses | | 3 hours  13/02/2023 |
| **Lamiaceae Family:**  Including their description, chemical content, and cultivation, traditional and modern uses. | | 3 hours  20/02/2023 |
| **Liliaceae Family:**  Including their description, chemical content, and cultivation, traditional and modern uses. | | 3 hours  27/02/2023 |
| **Traditional methods for extraction and preparation herbal medicine** | | 3 hours  06/03/2023 |
| **Modern methods of extraction and preparation:**  Including use of some modern equipment, and quicker ways for extraction | | 3 hours  13/03/2023 |
| **Asteraceae Family:**  Including their description, chemical content, and cultivation, traditional and modern uses. | | 3 hours  27/03/2023 |
| **Toxic Plants**  Including their description, chemical content | | 3 hours  03/04/2023 |
| Review & General Discussion ? | | 3 hours  10/04/2023 |
| **19. Examinations:**  **Q1. *Why study medicinal plants?***  Answer:  Studying medicinal due to their use as:  1- Source of medicines – traditional/ conventional  2- Many food crops have medicinal properties  3- Understanding of toxicity  4- Conservation/ Preservation of biological diversity  ***Q2. Answer by true (T) and false (F) for the following sentences with correcting the false sentences?***  Key action of fabaceae family is spasmolytic and anticholinergic.  *Answer:*   1. *False:* Key action of Solanaceae family is spasmolytic and anticholinergic.   **Q3/ Select the correct words**  **4-** The key content of Solanaceae family is ………………………  **A/** Alkaloids **B/** Terpenoids **C/** Phenolics  **D/** Glycosides  Answer: **A/** Alkaloids | | |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ** | | |