



زانكۆی سه‌لاحه‌دین – هه‌ولێر

Salahaddin University-Erbil

A survey of flowering plants in Sork Mountain during spring season

Research Project

Submitted to the department of Biology in fulfillment of the requirements for the
degree of BSc.in Biology

By:

Fatima Ibrahim Ismail

Supervised by:

Dr. Shilan A.Husain

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Supervisor's Certification

We certify that this research project was prepared under our supervision in the Department of Biology, College of Education, Salahaddin University-Erbil and hereby recommend it to be accepted in partial fulfilment of the requirements for the degree of BSc. in Biology-Plant Taxonomy.

Signature Supervisor:

Dr.Shilan A.Husain

Dare:

Chair Certification

In view of the available recommendation, I forward this research project for debate by the examining committee.

Signature:

Name: Asst. Prof. Dr. Sivan Omer Majeed

Chairman of Biology Department

Date: /4 /2024

DEDICATION

I dedicate this work to

My lovely mom

My brothers

My sisters

My friend Payam

ACKNOWLEDGEMENTS

First of all, my thanks are addressed to God for inspiring me with patience and strength to fulfill the study. Deepest gratitude with great respect is due to my supervisor Dr. Shilan A. Husain for his continuous encouragement, endless patience, precious remarks, and professional advice. My gratitude and appreciation are dedicated to the presidency of Salahaddin University- Erbil, the deanery of the College of Education, and to the head of the Biology Department. Special thanks are extended to my dear family and all my friends. Finally, I'm grateful to whoever helped me in conducting this study.

SUMMARY

In this study, a survey of flowering plants during the spring season was done in Sork Mountain which located to the northeast of Erbil province. (69) Genera were collected during one scientific excursion in which they belong to (27) plant families, most of these collected plants are herbs, with the presence of the tree also in this area. (23) Families of them belong to the dicotyledon plants and (4) families are among monocotyledon plants. The most diagnosed genera were backed to the families Asteraceae, Leguminosae and Caryophyllaceae. While the most remain families have between 1 to 3 genera.

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1-INTRODUCTION

The discovery and naming of plants have attracted a lot of attention throughout history. The science that explores, describes names, and classifies all plants is called 'Taxonomy'. Plant taxonomy includes the description of the variation of plants, the investigation of the causes and consequences of this variation, and the manipulation of the data obtained to produce a system of classification. Taxonomy makes communicating biological information on plants much easier because it facilitates categorizing them. The three activities of classification, nomenclature, and identification are the main functions of taxonomy. Traditionally, plants have been classified based on one or a few easily observable characters (artificial systems) or on morphological features and overall similarities using as many taxonomic characters as possible (natural systems). However, an insufficient number of experts, and the instability of phenotypes, which are easily affected by environmental factors, made this conventional method of classification meet difficulties. With the advent of the fields of phylogenetics, cladistics, and systematics, artificial systems have progressed to a system of modern biological classification based on the evolutionary relationships between organisms, both living and extinct. Here, as for the identification of plants, the development of various molecular techniques that generate molecular markers has made it possible to accurately identify plants. The ability to sequence DNA has uncovered a great deal more about where a plant belongs taxonomically and helps locate new species precisely. (Haider, 2018)

Flowering plants are plants that bear flowers and fruits and form the clade Angiospermae commonly called angiosperms. They include all flowering plants without a woody stem, grasses and grass-like plants, a vast majority of broad-leaved trees, shrubs and vines, and most aquatic plants. The term "angiosperm" is derived from the Greek words angeion ('container, vessel') and sperma ('seed'), meaning that the seeds are enclosed within a fruit. They are by far the most diverse group of land plants with 64 orders, 416 families, approximately 13,000 known genera, and 300,000

known species. Angiosperms were formerly called Magnoliophyta angiosperms are distinguished from the other seed-producing plants, the gymnosperms, by having flowers, xylem consisting of vessel elements instead of tracheids, endosperm within their seeds, and fruits that completely envelop the seeds. The ancestors of flowering plants diverged from the common ancestor of all living gymnosperms before the end of the Carboniferous, over 300 million years ago. In the Cretaceous, angiosperms diversified explosively, becoming the dominant group of plants across the planet (Ur Rehman et al., 2021)

Plants are good for us. They make our homes and gardens look beautiful, they give us a sense of purpose and they can bring nature into urban environments. However, did you know that some studies have shown that plants can be beneficial for both physical and mental health? From the humble Dandelion to the popular Aloe Vera, we'll delve into what these potential benefits are and our top tips for making the most of them.

Natural plant toxins may be present naturally in plants such as fruits and vegetables which are common food sources. They are usually secondary metabolites produced by plants to protect themselves against various threats such as bacteria, fungi, insects and predators. Natural toxins may also be present in food plants because of natural selection and new breeding methods that enhance these protective mechanisms. Plants are usual cause of medical dilemma, generally due to the phytochemicals. The different flowering plant species differ not only in profile but also in limitless biochemical properties phytochemical substances were not only to compensate animal pollinators and seed distributors but also to protect them from animals, which pose a risk. However, some phytochemical or secondary metabolites produced by plants are toxins-like substances, which are similar to extracellular bacterial toxins in their properties and may cause problems in humans. These have both useful and harmful effects on human beings and animals. (Zimdahl and Basinger, 2024). In this study the mountain Sork was selected to survey its flowering plants during the spring season due to the presence of a good environment that facilitated to growth of different types of plant genera. Many of the founding plants have an important in human life either medicinally

or used as food, *Allium* plant have long been used as medicinal plants in folk medicine as Antioxidant, Enhancing immune defense, Reduce risk of infection. The genus *Anthemis* used in Common cold, Antitussive, Reducing body temperature, Bronchitis, sinusitis, Sore throat, Hair tonic, Cleaning and opening pores of skin, healing of. Wounds and the genus *Trigonella* used in Inflammation of skin, Irritable bowel Appetizer, Hypoglycemic, Diuretic, Stimulate lactation, Sexual tonic in women, and Renal stone. Also the genus *Corcus* used for Dyspepsia, Delaying menstrual cycle, Arthritis. (Naqishbandi, 2014), (Abdulrahman and Kayfi, 2023).

2-MATERIALS AND METHODS

In this study one scientific excursions were done to the location of Sork Mountain during the year 2024. The identification process has been done depending on Flora of Iraq(Guest and Townsend, 1966),(Townsend and Guest, 1974),(Townsend et al., 1985),(Townsend and Guest, 1985),(Townsend and Guest, 1985) and (Ali et al., 2019). A map showing the location of Sork mountain and the adjacent regions and its location from Erbil province (figures 1), as well as some field photographs of the collected plants (plates 1-3) have been putted.

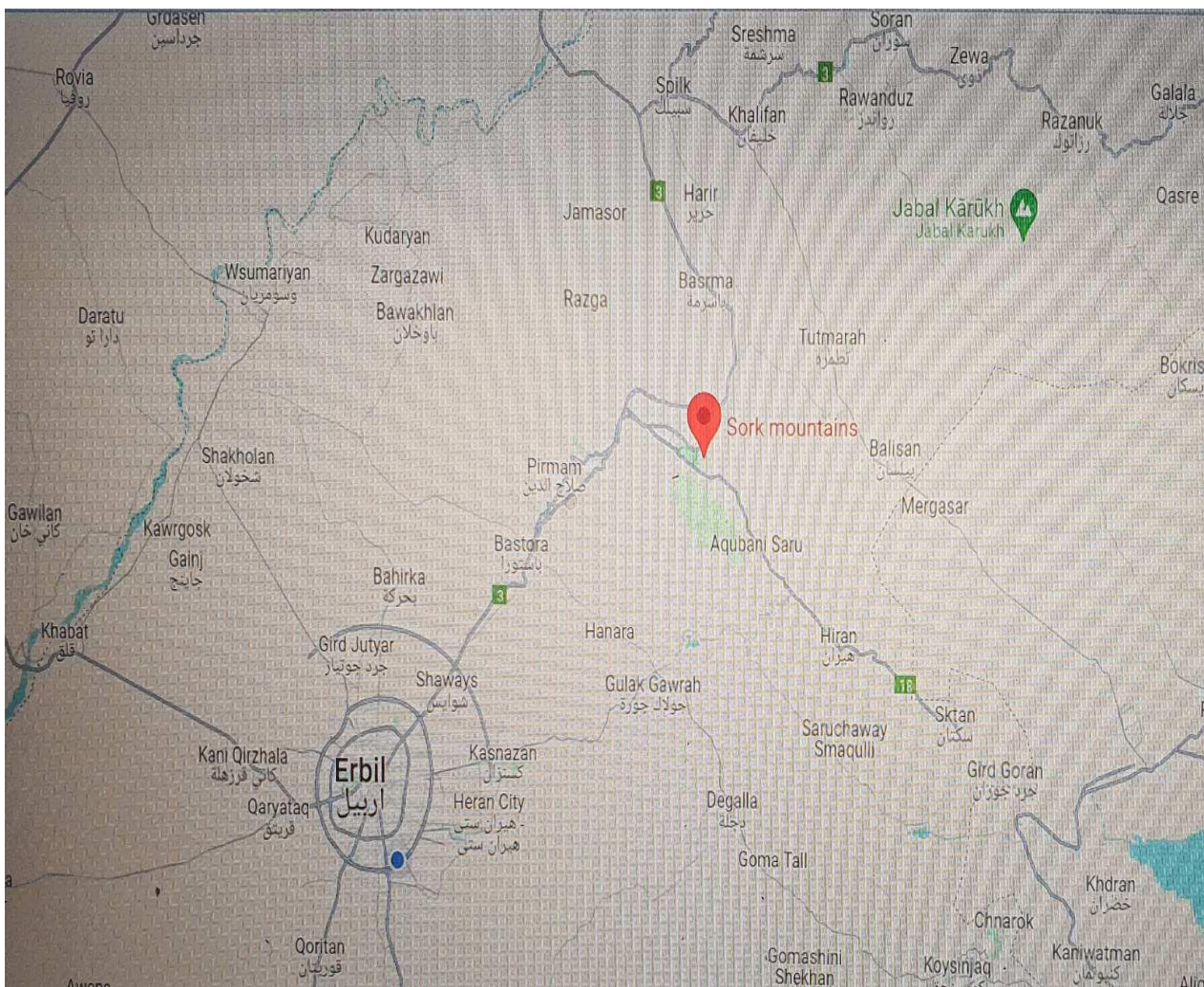


Figure: Location of Sork Mountain

Results

In this study (69) genera are collected which belong to (27) families as the following:

1. Boraginaceae

-*Anchusa*

-*Onosma*

-*Echium*

2. Crassulaceae

-*Rosularia*

-*Umbilicus*

-*Sedum*

3. Asteraceae

-*Scorzonera*

-*Anthemis*

-*Echium*

-*Centaurea*

-*Crips*

-*Crupina.*

-*Helichrysum*

-*Rhagadiolus*

-*Sensio*

-*Gundelia*

4. Scrophollariaceae

-*Scrophularia.*

-*Verbascum*

-*Veronica*

5. Cruciferae

-*Iberis*

-Alyssum

-Lepidium

6. Euphorbiaceae

-Euphorbia

7. Fagaceae

-Quercus

8. Geraniaceae

-Erodium

-Geranium

-Biebersteinia

9. Graminae

-Poa

-Avena

-Bromus.

10. Iridaceae

-Corcus

11. Labiatae

-Salvia

12. Leguminosae

-Onobrichis

-Vicia

-Prosopis.

-Lathyrus.

-Pisum

-Astragalus

-Trifolium.

-Medicago

13-Berberidaceae

-Bongardia

14. Liliaceae

-Fritillaria

-Allium

-Gagea .

-Tulip

-Eremurus.

15. Papaveraceae

-Papaver

16. Rubiaceae

-Galium

17. Ranunculaceae

-Ranunculus

-Anemone

18. Gentianaceae

-Gentiana

19. Valerianaceae

-Valerianella

20. Araceae

- Eminium

- Biarum

21. Caryophyllaceae

-Minuartia

-Silene

-Dianthus

-Vaccaria

-Ceratum

22. Rosaceae

-Crataegus

-Prunus

-Poterium

23. Umbeliferae

-Anisosciadium

-Scandix

24. Dipsacaceae

-Scabiosa

25-Gentianaceae

-Gentiana

26. Cistaceae

-Helianthemum.

27-Polygonaceae

-Rumex

-Polygonum

4-DISCUSSION

This study was done during spring season in Sork Mountain which located to the northeast of Erbil city to collect the flowering plants that are found in this area. During this study (69) genera were diagnosed which belong to (27) families. The favorable environments such as rain, soil nature and temperature helps to grow a variety kinds of plants in the study area. The most diagnosed families are dicotyledonous plants (23) which have a tap roots and belong to dicotyledon while (4) families are belong to monocotyledon plants that have bulb or corm root also the collected plants mostly are herbs with present of trees in the mountain. The widespread genera on the mountain were back to the families Compositae, Leguminosae and Caryophillaceae. While the most remain families have between 1 to 3 genera.

5- CONCLUSIONS

- 1- (69) Genera were collected during scientific exclusion in this region belong to (27) families.
- 2-Most of the collected plants were herbaceous.
- 3- (23) families were belonging to dicotyledon plants.
- 4- (4) families were monocotyledon plants.
- 5-The commonly diagnosed genera were backed to Asteraceae, Leguminosae and Caryophillaceae families.

6- RECOMMENDATIONS:

- 1-Made more surveying studies in different Kurdistan regions during different seasons of the year.
- 2-Identifying the species of collected plant specimens
- 3- Protection the rare and threaten by extinction species of the plant families.

7- References

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Ranunculus



Anisosciadium



Crupina



Anisosciadium



Crupina



Plate (1): some specimens which are collected in this research.



Astragalus



Malva



Muscari



Cynodon



Centaurea



Picris

Plate (2): some specimens which are collected in this research.