CHAPTER ONE
INTRODUCTION

A. Background of Study

The Qur'an is a holy book for mankind that contains many verses about scientific signs. Allah SWT has bestowed reason on humans to study the scientific signs in the Qur'an. In this modern era, scientific signs in the Qur'an are an interesting topic to discuss. One theme that is often discussed is plants. In the Qur'an, plants are mentioned in many verses with various meanings, such as parables, benefits and uses, growth processes, types of plants, and so on.[1]

Plants are one classification of living things with chlorophyll, a green leaf substance that plays a role in the process of photosynthesis. In biology, plants are classified as multicellular organisms in the kingdom Plantae. Currently, there are about 350,000 species of plants, of which 258,650 are flowering plants, and 18,000 species include bryophytes.[2] Plants are multicellular eukaryotic organisms that have existed for 550 million years. Initially, plants lived in water as algae, before finally appearing on land about 420 million years ago. Since then, plants have evolved rapidly and developed into more complex structures than algae, forming diverse cells, tissues and organs.[3]

[1] Lajnah Pentashihan Mushaf Al-Qur'an Badan Litbang dan Diklat Kementrian Agama RI, *Tumbuhan Dalam Prespektif Al-Qur'an Dan Sains* (Jakarta: Perpustakaan Nasional RI: Katalog Dalam Terbitan, 2011), 5.

[2] Yaya Sulthon Aziz, *Morfologi Anatomi Dan Sistematika Tumbuhan* (Yogyakarta: Pustaka Baru Press, 2021), 3.

[3] Estiti B.Hidayat, *Anatomi Tumbuhan Berbiji* (Bandung: ITB Press, n.d.), 4.

Plant development involves complex stages. It starts with pollination, then develops into a sprout, until it grows into a seed by absorbing water and nutrients from the soil. In germination, plants form roots to absorb water and nutrients, leaves for photosynthesis, and buds. After having complete organs, plants enter the production phase, characterized by the appearance of flowers that produce fruit. The final phase is ageing, where plants lose the ability to produce new offspring.[4]

Botany is the science of plants. Studying plant classification principles and how they relate to the evolutionary process of the plant is the first step to establishing strategies for plant conservation. The molecular properties of plant life play a vital role in plant survival and evolution. They help plants to resist threats and challenges like human population and activities, climate change, and pollution. Some treaties and organizations have established strategies to overcome threat effects on plants. The methods by which plant species are preserved and recorded for the future are vital to understanding how these processes are relevant to biodiversity. It is also essential for scientists to know the past, present, and future of the botanical life.[5]

Plant morphology is a branch of biology that studies plants' physical form and external structure.[6] Meanwhile, plant anatomy studies the

[4] Desta Abayechaw and Kedir Wulchafo, "The Concept and Process of Seed Germination-A Review," Int.J.Curr.Res.Aca.Rev Vol. 8, Nomor. 5 (May 2020): 100–101, https://doi.org/10.20546/ijcrar.2020.805.011.

[5] Sameh Abdelghany, "An Introduction to Botany," Botanical Gazzete Vol. 100, Nomor. 3 (December 9, 2019): 3, https://doi.org/10.13140/RG.2.1.4880.8081.

[6] Angreni Beaktris Liunokas and Agsen Hosanty S.Bilik, *Karakteristik Morfologi Tumbuhan* (Yogyakarta: CV Budi Utama, 2021), 1.

internal structure of plants in detail.[7] Both of these fields are closely related to Qur'anic verses that discuss plants, such as Surah Al-Baqarah verse 22, Al-An'am verse 95, Yusuf verse 47, Al-Mu'minun verse 20, Fatir verse 27, and Az-Zumar verse 21.

For example, in surah Fatir verse 27, Fakhruddin Ar-Razi explains that the differences in fruits occur because of the differences in the places where they grow. Some plants cannot grow in certain regions. He also explains that pigment variations refer to differences in colour in fruits, such as white and red, which are included in plant pigments.[8] This interpretation is reinforced by Sha'rawi, who highlights the diversity of colours in plants in gardens and fields and how the colour spectrum can produce infinite gradations.[9]

Meanwhile, Zaghlul An-Najjar, a contemporary *mufasir*, offers a unique approach to interpreting scientific verses in the Qur'an. Unlike classical *mufasirs* such as Ar-Razi and Sha'rawi, Zaghlul integrates modern science with Qur'anic interpretation. His tafsir, Tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim, emphasizes rationality and methodological approaches to show the harmony between the Qur'an and modern science. His approach focuses on verses directly related to science, thus providing a new perspective relevant to the contemporary era.

Zaghlul also highlights Qur'ānic verses related to cosmic science, showing that the present day's development of physical, biological and

[7] Anna Fitri Hindriana and Handayani, *Anatomi Tumbuhan* (Malang: PT. Literasi Nusantara Abadi Group, 2023), 1.

[8] Fakhruddin Ar-Razi, *Mafatih Al-Ghaib*, vol. 26 (Lebanon: Dar Al-Fikr, 1981), 19.

[9] Muhammad Mutawalli Sya'rawi, *Tafsir Sya'rawi*, vol. 20 (Mesir: Ikhbar Al-Yaum, 1991), 12492.

chemical sciences has been hinted at in the Qur'ān.[10] This approach inspires Muslims to explore, understand and prove the relationship between revelation and science.

Based on this background, the author will examine Zaghlul An-Najjar's interpretation of the verses that discuss plant morphology and anatomy. By examining the work of Tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim, this research aims to explore how the Qur'an discusses plant science in depth, especially in a modern context. So, it will be fascinating to discuss the study of plant morphology and anatomy in the Qur'an, which is contained in the title "**Plant Morphology and Anatomy in the Qur'an According to Zaghlul An-Najjar in Tafseer Al-Ayat-Al-Kauniyah Fi Al-Qur'an Al-Karim."**

B. Formulation of the Problem

Based on the background of the problems that have been described, the problem formulation that will be discussed in this study, namely:

1. What is plant morphology in the Qur'an according to Zaghlul An-Najjar in Tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim ?
2. What is plant anatomy in the Qur'an according to Zaghlul An-Najjar in Tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim?

C. Objectives of Research

The objectives of this research are:

[10] Umaiyatus Syarifah and Siti Fahimah, "Zaghlul Raghib Muhammad An-Najjar Methods and Principles of Scientific Exegesis: A Review of Tafsir Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim," *Ulul Albab* 21, no. 2 (2020): 296, https://doi.org/10.18860/ua.v21i2.10227a.

1. To know and understand the morphology of plants in the Qur'an in tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim with the perspective of Zaghlul An-Najjar.
2. To know and understand the anatomy of plants in the Qur'an in tafseer Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim with the perspective of Zaghlul An-Najjar.

D. Significance of Research

This research is expected to provide benefits for readers, especially in the following matters:

1. Theoritical Significance

a. It is hoped that this research can contribute to the development of science related to the benefits of tafseer studies in the field of science.

b. In line with the scientific vision of the Qur'anic Science and Tafseer Department on science interpretation.

c. As reference material for students who want to research verses about scientific cues in the Qur'an, especially about plant morphology and anatomy in the Qur'an.

2. Practical Significance

a. Can add insight and knowledge in the study of interpretation discussed the interpretation of verses related to morphology and anatomy of plants in the book of interpretation Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim by Zaghlul An-Najjar.

b. To open everyone's minds to the fact that the Qur'an does not only contain news or advice from the past, but more than that, it includes hints about plants and their surroundings.

c. To inspire the spirit of Muslim scientists and technologists to always explore the meaning contained in the Qur'an, especially verses related to plant morphology and anatomy through scientific research.

d. Can increase intellectual contributions in the study of tafsir ilmi for the entire academic community of the Qur'anic Science and Tafseer Department, Faculty of Ushuluddin, Darussalam Gontor University in particular, and to research.

E. Literature Review

This research refers to research that has been conducted by several previous researchers and several studies in the form of journals, theses, or previous research. So in this previous study, the author wants to take several studies that are close to the title being studied, including:

1. The thesis was written by Nishful Lail Maghfuroh, a student of Qur'anic Science and Tafseer Department, Faculty of Ushuluddin, Darussalam Gontor University, in 2022 with the title " فسيولوجيا النبات في القرآن عند طنطاوي جوهري في تفسير الجواهر في تفسير(القرآن الكريم (دراسة موضوعية علمية". This research explored the discussion of plant physiology in Tafseer Al-Jawahir fi Tafseer Al-Qur'an Al-Karim by Thantawi Jauhari. This study, which employs an analytical descriptive method, classifies plant

physiology into four major aspects: respiration and transpiration, photosynthesis, pollination, and plant growth mechanism.[11]

2. The thesis was written by Khairuddin, a student of the Qur'anic Science and Tafseer Department, Faculty of Ushuluddin and Humaniora, at Walisongo State Islamic University Semarang in 2015, with the title "Morfologi dan Anatomi Buah Dalam Al-Qur'an". This research employed scientific and descriptive tafseer methods to analyze the meaning of the words found ini Surah Al-An'am verse 99 regarding fruit morphology and anatomy. The study highlights that fruits mentioned in the Qur'an possess unique characteristics and various benefits for worldly life and the hereafter. From a botanical perspective, these fruits exhibit diverse morphological classifications, such as grapes categorized as aggregate accessory fruits, dates and olives as simple fleshy drupes, figs and bananas as multiple fruits, and pomegranates as simple fleshy fruits. In terms of anatomy, most of these fruits, including grapes, figs, olives, pomegranates, and bananas, belong to the berry group, while dates are classified as fleshy accessory fruits.[12]
3. Thesis written by Afifah Rahadian Pratama, a student of the Al-Qur'an and Tafseer Science Study Program, Faculty of Ushuluddin, Darussalam Gontor University, in 2022 with the title

[11] Nishful Laili Maghfuroh, "فسيولوجيا النبات في القرآن عند طنطاوي جوهري في تفسير الجواهر في تفسير(القرآن الكريم (دراسة موضوعية علمية" (Ponorogo: Ilmu Al-Qur'an dan Tafsir, Universitas Darussalam Gontor, 2022).

[12] Khairuddin, "Morfologi Dan Anatomi Buah Dalam Al-Qur'an" (Semarang: Ilmu Al-Qur'an dan Tafsir, Walisongo State Islamic University Semarang, 2015).

الإعجاز العلمى للتمر في القرآن الكريم عند زغلول راغب النجار (دراسة موضوعية علمية)". This research focuses on the significance of dates in the Qur'an based on the interpretation of Zaghlul Raghib Al-Najjar. The study underscores the vital role of dates as a nutritious staple food, their diverse varieties, their medical benefits, and their ecological reliance on water for survival.[13]

4. The thesis was written by Ramadea Tarisa Aini, a student of Qur'anic Science and Tafseer Department, Faculty of Ushuluddin, Sultan Syarif Kasim Riau State Islamic University, in 2024 with the title "Tafsir Tentang Ekologi: Analisis Proses Fotosintesis Tumbuhan Dalam Al-Qur'an". This research examines how the Qur'an explains the process of photosynthesis. The study also analyzes its environmental relevance, highlighting the role of plants in sustaining ecological balance and supporting other living organisms.[14]
5. The thesis was written by Fitroh Alwi Fuadi, a student of Qur'anic Science and Tafseer Department, Faculty of Ushuluddin, Adab, and Humanities, Jember State Islamic Institute, in 2018 with the title "Morfologi Tumbuhan Dalam Al-Qur'an dan Korelasi Dengan Sains (Telaah Tafsir Ilmi Ayat-ayat Tumbuhan Dalam

[13] Afifah Rahardian Pratama, "الإعجاز العلمى للتمر في القرآن الكريم عند زغلول راغب النجار (دراسة موضوعية علمية)" (Ponorogo: Ilmu Al-Qur'an dan Tafsir, Universitas Darussalam Gontor, 2022).

[14] Ramadea Tarisa Aini, "Tafsir Tentang Ekologi: Analisis Proses Fotosintesis Tumbuhan Dalam Al-Qur'an" (Riau: Ilmu Al-Qur'an dan Tafsir, Universitas Islam Negeri Sultan Syarif Kasim Riau, 2024).

Tafsir Al-Jawahir fi Tafsir Al-Qur'an Al-Karim karya Tantowi Jauhari)". This research conducted a study on plant morphology in the Qur'an. Using a qualitative descriptive method with a philosophical historical approach, the research explores how Qur'anic verses align with scientific explanations in Tafseer Al-Jawahir fi Tafseer Al-Qur'an Al-Karim by Thantawi Jauhari.[15]

6. In 2018, Fakhri Muhammad, a student of the Al-Qur'an and Tafsir Department, Faculty of Ushuluddin Adab and Dakwah, Tulungagung State Islamic Institute, wrote a thesis titled "Konsep Pelestarian Tumbuhan Dalam Al-Qur'an." This study discusses the importance of plant conservation as emphasized in the Qur'an. The research identifies key strategies for environmental sustainability, such as optimizing land use, preventing plant overexploitation, preserving natural vegetation, and promoting reforestation in urban areas.[16]
7. Apriadi Fauzan, a student of the Al-Qur'an and Tafseer Department, Faculty of Ushuluddin, Sunan Kalijaga University Yogyakarta, wrote the thesis in 2015 under the title "Tumbuh-tumbuhan dan Buah-buahan dalam Al-Qur'an." This research uses a descriptive-analytical method and discusses the names of plants and fruits in the Qur'an. This study analyzed various plants and fruits referenced in the Qur'an. His study identifies

[15] Fitroh Alwi Fuadi, "Morfologi Tumbuhan Dalam Al-Qur'an Dan Korelasi Dengan Sains (Telaah Tafsir Ilmi Ayat-Ayat Tumbuhan Dalam Tafsir Al-Jawahir Fi Tafsir Al-Qur'an Al-Karim Karya Tantowi Jauhari)" (Jember: Ilmu Al-Qur'an dan Tafsir, Institut Agama Islam Negeri Jember, 2018).

[16] Fakhri Muhammad, "Konsep Pelestarian Tumbuhan Dalam Al-Qur'an" (Tulungagung: Ilmu Al-Qur'an dan Tafsir, Institut Agama Islam Tulungagung, 2018).

seven plant species, Zanjabil, 'Ada, Basal, Fum, Qissa', Sidr, and Atsal, as well as two plants specifically mentioned concerning the afterlife: Zaqqum and Sidr.[17]

It can be concluded that this research is different from previous theses in several aspects. In terms of approach, this research combines scientific interpretation with in-depth analysis of plant morphology and anatomy. At the same time, previous studies focus on physiology, plant benefits, or ecological aspects. In terms of method, this research uses a descriptive-analytical method by emphasizing the correlation between modern science and Qur'anic verses. In contrast, many previous theses used a purely historical or descriptive philosophical approach. The figure studied in this research is Zaghlul An-Najjar, whose modern scientific interpretation differs from previous studies that use the work of Thantawi Jauhari or other figures more often. In addition, this study examines Qur'anic verses that are directly related to the structure and function of plants. In contrast, previous studies have mainly discussed verses related to ecology, physiology, or certain types of plants.

F. Theoretical Framework

In this research, the researcher wants to study this topic using scientific theories and rules, starting with mentioning the problem and its solution. This method is based on moving from the introduction to the

[17] Apriadi Fauzan, "Tumbuh-Tumbuhan Dan Buah-Buahan Dalam Al-Qur'an" (Yogyakarta: Ilmu Al-Qur'an dan Tafsir, Sunan Kalijaga, 2015).

conclusion, i.e., from the general to the particular. If the introduction is correct, the conclusion is also accepted as accurate.[18]

The main objective of the process of Qur'anic interpretation, from ancient times to the present, is to explain the will of Allah SWT and the effectiveness of His will in the areas of faith, the revealed laws, and the values and ethical management brought by the Qur'an to guide the human soul. The main objective of this method of interpretation is directed towards using the results in the field of science to prove various scientific facts that have been mentioned in the Qur'ān.[19]

The researcher focused on some Qur'anic verses about plants and analyzed them in the context of scientific tafsir. Therefore, the researcher conducted a study on this topic. Scientific research examines Allah SWT's creatures in the sky, on earth, animals, and other creations mentioned and collected in the Qur'an.[20]

Abdul Rahman Al-Makki, as cited by Sujiyat, mentioned that the best steps in scientific interpretation are as follows:

1. Interpreting kauniyah verses (verses related to natural phenomena) by paying attention to their compatibility with the basic meaning in the Qur'an.
2. The use of scientific theories is limited to the signals in the kauniyah verses.
3. Considering the principles and rules of interpretation in general.

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[18] رحيم يونس كرو العزاوي, *مقدمة في منهج البحث العلمى*, الطبعة الأولى (عمان: دار دجلة, ٢٠٠٨), ٢٣.

[19] Sujiat Zubaidi, *Epistimologi Penafsiran Ilmiah Dalam Al-Qur'an, Kritik Epistemologi Dan Model Pembacaan Kontemporer*, ed. Mohammad Muslih, Cetakan kedua (Yogyakarta: LESFI, 2018), 30.

[20] مناع القطان, *مباحث في علوم القرآن* (قاهرة: مكتبة وهبة, ٢٠٠٠), ٢٦٣–٦٤.

4. Not deviating from the basic principles in tafsir.
5. Considering the suitability of other verses and not leaving the principles of Islamic law.[21]

Each contemporary mufasir has its approach to interpreting the Qur'an. Interpretation methods can be divided into four categories: scientific interpretation, mazhabi interpretation, social, literary interpretation, and atheistic interpretation.[22] The researcher will continue by discussing thematic interpretation, in which the researcher tries to collect Qur'anic verses related to the function of mountains. Then, this research continues to reveal the scientific wonders of these verses. As explained by Zaghlul Raghib An-Najjar in his book, the meaning of scientific miracles is to uncover the secrets of the Qur'an through signs and various indications regarding His creation.[23]

G. Research Methods

1. Type of Research

This research falls into library research, which collects data from written materials such as books, manuscripts, documents, photos, etc. The object of this research is the work of *mufasirs* such as the book of tafsir, books, articles, journals, and documents related to the title of this research.[24]

[21] Sujiat Zubaidi, *Epistimologi Penafsiran Ilmiah Dalam Al-Qur'an, Kritik Epistemologi Dan Model Pembacaan Kontemporer*, 45–46.

[22] Muhammad Husain Ad-Dzahabi, *Tafsir Wa Mufassirun*, vol. 2 (Kairo: Maktabah Wahab, n.d.), 364.

[23] Zaghlul Raghib Muhammad An-Najjar, *Tafsir Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim*, vol. 1 (Maktabah Syuruq Ad-Dauliyyah, 2007), 7.

[24] Sugiyono, *Metode Penelitian Pendidikan: (Pendekatan Kuantitatif, Kualitatif Dan R & D)* (Alfabeta, 2019), 18.

Researchers collect data that is considered necessary from the literature obtained to complete the research being conducted. Usually, this literature research produces conclusions about the tendency of a theory to be used over time, the development of a paradigm, and specific scientific approaches.

2. Data Sources

Based on the point of view of the interpretive research being conducted and used in this study, the data sources used are primary and secondary data.

a. Primary Reference

Primary references are sources obtained directly from research subjects or data obtained from original sources.[25] Primary references in this research were obtained from Islamic and Western literature books, journals, theories, and opinions related to the interpretation of plant morphology and anatomy in the Qur'an and its understanding from a scientific point of view, namely:

1. Tafsir Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim by Zaghlul An-Najjar.

b. Secondary Reference

Secondary references are sources that support, complement, and explain basic data derived from books related to the topic,

[25] Budi Puspo Priadi, *Metode Evaluasi Kualitatif* (Yogyakarta: Pustaka Pelajar Offset, 2009), 61.

journals, and opinion theories that are closely related to the problem to be studied, namely:

1. Tafsir At-Tahrir wa At-Tanwir by Ibnu Asyur.
2. Tafsir Jami'ul Ahkam by Abu Bakar Al-Qurthubi.
3. Tafsir Mafatih Al-Ghaib by Fakhruddin Ar-Razi.
4. Tafsir Ruhul Ma'ani by Al-Alusi Al-Baghdadi.
5. Tafsir At-Taysir Al-Karim Ar-Rahman by As-Sa'di.
6. Tafsir Al-Kasyaf by Az-Zamkhasyari.
7. Tafsir Ma'alimil Tanzil by Al-Baghowi.
8. Morfologi Anatomi dan Sistematika Tumbuhan by Yaya Sulthon Aziz.
9. Morfologi Tumbuhan by Gembong Tjitsoepomo.
10. Anatomi Tumbuhan by Sri Mulyani.
11. An-Nabatat Fi Al-Qur'an by Zaghlul An-Najjar.

3. Analysis of Data

It is an activity where researchers collect and manage data to form research data that can guarantee its validity.[26] All data collected will then be processed and analyzed through the data interpretation stage and then described in a narrative, descriptive or tabular manner on the data obtained. The conclusion or explanation of the results of the data analysis will be the research conclusion. What is meant by data analysis method is a procedure or steps to obtain scientific knowledge or science. Meanwhile, research methodology is a systematic way to compile knowledge. Meanwhile, research methods are ways to implement

[26] Dedy Mulyana, *Metode Penelitian Kualitatif* (Bandung: Roesda Karya, 2004), 51.

research methods. Research methods usually refer to forms of research. The forms of research methodology used in this study are:

a. Descriptive Method

The descriptive method examines the status of a group of people, an object, a system of thought, a condition, or a class of events in the present.[27] This descriptive research aims to make a description or painting systematically related to the morphology and anatomy of plants according to Zaghlul Najjar.

b. Analysis Method

The analytical method aims to examine data conceptually and explain findings based on problems to understand the existing data.[28] In this research, the analytical method is used to interpret verses of the Qur'an. The steps include identifying problems and the objectives to be achieved, presenting the interpretation of the verses under study, and revealing the results analytically and systematically.

H. System of the Study

To facilitate the explanation and discussion of the research, draw conclusions, and achieve the desired outcomes, the researcher has arranged the discussion structure into several chapters and subchapters, as follows:

Chapter I, contains the Background of the Study based on the background and underlying problem, the Problem Formulation arises and

[27] Moh.Nazir, *Metode Penelitian* (Bogor: Penerbit Ghalia Indonesia, n.d.), 43.
[28] Moh.Nazir, 45.

is complimented by the Purpose of the Discussion and the Use of Research as the target to be achieved in this study. A literature review or previous research is a supporting factor that contains the foundation of this thesis writing, which is then described with definitions related to the title of this research. And followed by a Theoretical Framework that contains the theory about the research to be studied and the approach used. It also links to the Research Method, Systematic Discussion, and Bibliography.

Chapter II consists of four parts: a glimpse of Zaghlul An-Najjar, which includes his birth, scientific journey, and extraordinary works. In the second part, researchers explain the definition of the book of interpretation Al-Ayat Al-Kauniyyah Fi Al-Qur'an Al-Karim. In the third part, researchers explain the concept of plant morphology, and in the fourth part, researchers explain the concept of plant anatomy.

Chapter III describes the morphology and anatomy of plants in the Qur'an by explaining some scholars' views. It describes the result of research on the interpretation of Qur'anic verses regarding plant morphology and anatomy based on the interpretation of Zaghlul An-Najjar. This includes verses about the types of plants based on their seeds and pigments.

Chapter IV is a closing chapter containing statements as a conclusion to the research and a closing report with a component in which the researchers make suggestions to advance all parties. It ends with a Bibliography that mentions all the literature referenced in this research.