turnitin unesa1

151 Similarity

Turnitin

Document Details

Submission ID
trn:oid:::3618:143410033

Submission Date
Jun 18, 2026, 4:48 AM GMT+7

Download Date
Jun 18, 2026, 4:50 AM GMT+7

File Name
151 Similarity.pdf

File Size
488.6 KB

1 Page

638 Words

3,575 Characters

9% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography

Exclusions

- 4 Excluded Matches

Match Groups

7 Not Cited or Quoted 9%
Matches with neither in-text citation nor quotation marks

0 Missing Quotations 0%
Matches that are still very similar to source material

0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation

0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

7% Internet sources
5% Publications
0% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

Match Groups

- **7** Not Cited or Quoted 9%
  Matches with neither in-text citation nor quotation marks
- **0** Missing Quotations 0%
  Matches that are still very similar to source material
- **0** Missing Citation 0%
  Matches that have quotation marks, but no in-text citation
- **0** Cited and Quoted 0%
  Matches with in-text citation present, but no quotation marks

Top Sources

7% Internet sources
5% Publications
0% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1 Internet
www.sciencegate.app 3%

2 Internet
journal.i-ros.org 2%

3 Publication
A. Mohamed, E. Abo-Marzoka. "Effects of Some Antioxidant Materials as a Foliar a... 2%

4 Internet
www.mdpi.com 2%

Journal of Current Studies in SDGs
Homepage : https://journal.i-ros.org/index.php/JOCSIS
Email : jocsis@i-ros.org

e-ISSN 3089-7564
Vol.2, No.1, March 2026

The Effect of Biological Fertilizers on Growth and Yields of Soybean (Glycine max L. Merr.) under Drought Stress toward SDG 2

Arief Septiawan, Rusmana Rusmana*, Sri Ritawati, Eltis Panca Ningsih

Universitas Sultan Ageng Tirtayasa, Serang, Indonesia

Check for updates OPEN ACCESS

DOI : https://doi.org/10.63230/jocsis.2.1.151

Sections Info

Article history:
Submitted: May 20, 2026
Final Revised: June 4, 2026
Accepted: June 5, 2026
First Available Online: June 18, 2026
Publication Date: June 27, 2026

Keywords:
Arbuscular Mycorrhizal Fungi;
Biological Fertilizer;
Drought Stress;
Plant Growth-Promoting Rhizobacteria;
Soybean.

ABSTRACT

Objective: *Soybean (Glycine max L. Merr.) is an important source of vegetable protein and a major food commodity. However, expanding soybean cultivation into dryland areas is constrained by drought stress, which adversely affects plant growth and productivity. This study aimed to evaluate the effects of biological fertilizers and drought stress on soybean growth and yield.* ***Method:*** *The experiment was conducted from October 2019 to January 2020 in a greenhouse using a factorial Randomized Block Design with three replications. The first factor was biological fertilizer application, consisting of no fertilizer, Plant Growth-Promoting Rhizobacteria (PGPR) at 10 g L^{-1}, and Arbuscular Mycorrhizal Fungi (AMF) at 10 g $polybag^{-1}$. The second factor was drought stress based on soil water availability (SWA): 100%–100%, 100%–50%, 50%–100%, and 50%–50% during vegetative and generative phases.* ***Results:*** *Biological fertilizers did not significantly affect soybean growth or yield. In contrast, drought stress significantly reduced plant height, leaf number, leaf area, root length, plant dry weight, pod number, seed number, and seed yield, with the greatest reductions occurring under 50% SWA during both growth phases. No significant interaction was observed between biological fertilizers and drought stress treatments.* ***Novelty:*** *Identify water availability as the primary determinant of soybean productivity under drought conditions, supporting sustainable food production and SDG 2 (Zero Hunger).*

INTRODUCTION

In terms of food commodities, soybeans (Glycine max L. Merr.) rank third behind maize and rice and are a source of vegetable protein. About 7,291 tonnes of soybeans were produced in Banten in 2015, compared to just 863,183 tonnes in Indonesia. In the meantime, Indonesia imported 2,256,931.7 tonnes of soybean seeds in 2015 to meet domestic demand, and that amount rose to 2,671,914.1 tonnes in 2017. One tactic and endeavour to boost soybean yield is the extension of soybean planting regions to less-than-ideal ground, such as dry land (Celis et al., 2024; Peterson et al., 2018; Sharma et al., 2024). Soybeans must contend with maize and rice for the best land. It is anticipated that the area planted to soybeans will grow as unsuitable land is developed.

Through the use of PGPR inoculants as components of biofertilizers, dry land can be utilised for agricultural purposes by increasing the diversity of microorganisms and nutrients in the soil (Putrie et al., 2013). PGPR treatment increased plant biomass and N nutrient uptake in soybean plants. It is well established that mycorrhizal treatment boosts soybean plant growth and yield (Suherman et al., 2012).

The scarcity of water is the primary issue in arid regions (Chitsaz & Azarnivand, 2017; Karimi et al., 2024; Morante-Carballo et al., 2022). One of the limiting factors in soybean cultivation is drought or limited water availability (Staniak et al., 2023; Wang et al., 2022; Zanon et al., 2016). In addition to reducing plant development, severe drought stress can have an impact on a number of physiological and biochemical functions, including respiration, photosynthesis, translocation, ion uptake, carbohydrates, and nutrient metabolism (Abdalla, 2011; Azadeh et al., 2014; Sarkar et al., 2015). Soybean plant development and output could