

Peer Review

Review of: "Isolation of a Novel Plant Growth-Promoting *Dyella* sp. from Danish Natural Soil"

Archana Yadav¹

1. Centre for Biotechnology, BSTD, CSIR-North East Institute of Science and Technology, Jorhat, India

Comments

1. The abstract effectively conveys the research objectives and key findings but some sentences are long and complex, making them slightly difficult to follow. Consider rewording” Environmental soils are natural reservoir of unexplored microbes,including potentially beneficial microbes to improve plant performance” to something more concise, like “soil harbors diverse unexplored microbes, some of which can enhance plant growth.”

2.Grammer mistakes such as beneficial, affecting , specifically having problem in f letter or formatting issues.

3. a.The monoassociation based screening could be expanded slightly to indicate whether it was greenhouse, in vitro or field study.

b. Kindly provide a brief explanation of screening criteria or experimental conditions.

c. The mechanism by which *Dyella* sp.A4 promotes lateral root elongation is not discuseed.

4. materials and methods

Plant material and growth conditions: Use *Arabidopsis thaliana* instead of just *Arabidopsis* when first mentioned. Provide a citation if they follow a standard protocol.

5. Culture Independence Analysis of Microbiota

Consider specifying how the root sample were collected (eg. Washing,sonication,vortexing). Two steps PCR is clear. Specify the exact primer used in the second PCR. If different.

6. Whole genome sequencing of *Dyella* sp. A4

Ensure the clarity when describing the definition of novel sp.

Results section

In statistical analysis

double check $R^2 = 66.64\%$ is correct terminology here as PERMANOVA results should report both R^2 value and P value.

In microbial diversity and composition

Description of Alpha diversity could be expanded instead simply mention the Shannon index was significantly higher in bulk soil than in roots. Specify whether the Shannon index was computed using QIIME2 or R or another tool.

In Beta diversity Figure S2A rewrite sentence like PCoA based on Bray Curtis distances showed distinct clustering of bacterial communities between root associated (endosphere and rhizoplane) and bulk soil samples.

Taxonomic composition

Phylum level enrichment/depletion should be more structured.

Declarations

Potential competing interests: No potential competing interests to declare.