We thank the reviewer for the careful evaluation of our manuscript and insightful comments. The suggestions provided will be extremely valuable in improving the clarity, strengthening the soil-science framework, and enhancing the interpretation of the results. In response, we will thoroughly revise the manuscript to:

• strengthen the integration of the pedological context,
• improve methodological transparency, particularly regarding sampling design and soil analyses,
• enhance the mechanistic interpretation of the results in relation to soil constraints.

1. Pedological context

Reviewer comment: The study lacks a sufficiently detailed pedological framework

Response: We fully agree with the reviewer that a stronger integration of the pedological framework is essential. Accordingly, we will revise the manuscript to:
• include a clearer description of the soil, including its classification according to the WRB framework,
• provide a more comprehensive characterization of soil properties, including salinity-related parameters where applicable,
• expand the discussion on soil processes such as nutrient leaching, phosphorus availability, and ionic imbalance in coastal environments,
• explicitly link microbial traits to soil constraints by relating:
- phosphate solubilization to phosphorus limitation in calcareous/sandy soils,
- ACC deaminase activity to osmotic stress under saline conditions,
- siderophore production to iron limitation under high pH conditions.

2. Sampling design and soil background

Reviewer comment: Clarification is needed regarding sampling design, number of samples, origin of isolates, and soil analytical methods.

Response: We thank the reviewer for this important comment. We will revise the manuscript to improve clarity and transparency as follows:
• specify the number of sampled plants and rhizosphere soil samples,
• clarify whether bacterial isolates originate from distinct plants or repeated subsampling,
• explicitly describe the experimental design and replicate structure,
• clarify the method used for organic matter determination and ensure consistency throughout the manuscript,
• specify whether P_2O_5 corresponds to available or total phosphorus and indicate the analytical method used.

3. Interpretation of results

Reviewer comment: The discussion should better link PGPR traits to soil constraints and provide deeper mechanistic interpretation of strain-specific responses.

Response: We agree with the reviewer that strengthening the interpretation will enhance the scientific impact of the study. Accordingly, we will revise the Discussion to:
• explicitly link each PGPR trait to the identified soil constraints,
• improve the interpretation of strain-specific differences by proposing mechanistic explanations for enzymatic activity, antifungal potential, and plant growth promotion,
• provide clearer explanations for observed plant response patterns, including discrepancies between shoot length, biomass, and root development.

4. Strain-specific variability

Reviewer comment: The variability among *Pseudomonas* strains is not sufficiently explained.

Response: We appreciate the reviewer for this insightful comment. We will strengthen the Discussion by:
• providing a more detailed comparison of strain-specific functional traits,
• proposing possible ecological and physiological explanations for the observed variability,
• relating these differences to adaptation to rhizosphere conditions and functional specialization.

5. Technical corrections

Reviewer comment: Several formatting and technical issues need correction.

Response:
We thank the reviewer for these valuable comments. We will carefully revise the manuscript as follows:
• define all abbreviations (CFU, SI, ACCD) at first occurrence,
• harmonize numerical precision in tables,
• improve the discussion by reducing repetition and enhancing synthesis,
• update figures to specify error bars (SD or SE) and indicate the number of replicates (n),
• standardize formatting of units throughout the manuscript,
• correct all occurrences of “PH” to “pH”,
• ensure correct formatting of Latin binomials (italicized, proper capitalization).

Final statement

We thank the reviewer once again for the constructive and insightful feedback, which will significantly contribute to improving the quality, clarity, and scientific rigor of the manuscript. We are confident that the revisions outlined above will adequately address all comments raised and strengthen the overall quality and scientific contribution of the study.