



### REVIEWER'S REPORT

Manuscript No.: IJAR-57158

**Title:** Effects of arbuscular mycorrhizal fungal strains on the growth of cowpea [*Vigna unguiculata* (L.) Walp.] in the presence of Tilemsi natural phosphate (TNP).

**Recommendation:**

Accept after major revision .....

Rating	Excel.	Good	Fair	Poor
Originality			✓	
Techn. Quality			✓	
Clarity			✓	
Significance		✓		

Reviewer's ID: JPR- 198

### *Detailed Reviewer's Report*

The manuscript investigates the effect of *Glomus aggregatum* and Tilemsi natural phosphate on cowpea growth under greenhouse conditions. The topic is relevant for sustainable agriculture and low-input farming systems. The study shows positive treatment effects; however, the manuscript has moderate methodological strength but weak presentation and limited novelty.

#### 1. Originality

The study confirms already well-established findings on AMF–phosphate interactions. The novelty is limited to local soil and TNP context, which is regionally relevant but scientifically incremental.

#### 2. Technical Quality

Experimental design (factorial, 4 treatments, 10 replicates) is appropriate. However:

- Replication details are unclear (pot vs plant-level analysis).
- No information on randomization or blocking implementation despite “Fischer block design”.
- Statistical reporting is incomplete (no F-values, p-values).
- Mycorrhization data are partially reported (Table 3 incomplete; missing control/TNP-only values)

#### 3. Methodology

Methods are generally adequate but lack depth:

- No sterilization validation of soil (possible bias).
- No control for native microbial recolonization.

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- Inoculum characterization (spore count, viability) missing.
- Phosphate dose justification not provided.

### 4. Results & Data Presentation

Results show clear trends:

- Biomass increase with Ga + TNP (Table 2, page 5)
- High mycorrhization frequency but low intensity (Table 3, page 6)

However:

- Tables lack clarity and completeness.
- No graphical representation.
- No effect size or % increase reported.

### 5. Discussion

Discussion is literature-heavy but largely descriptive. Mechanistic explanation is superficial. No critical interpretation of low colonization intensity despite growth increase.