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REVIEWER'S REPORT

Manuscript No.: IJAR-55901

Title: Influence of *Cassia sieberiana* DC (Sieber's cassia, Fabaceae) on certain physical and chemical properties of soil in Fandene, Senegal

Recommendation:

- Accept as it is
- Accept after minor revision.....**
- Accept after major revision
- Do not accept (*Reasons below*)

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

Reviewer Name: Dr. Hari Prashad Joshi

Detailed Reviewer's Report

This study presents a valuable and well-structured investigation into the influence of *Cassia sieberiana* on soil physico-chemical properties in the Fandène region of Senegal. The research addresses a relevant gap concerning the specific impacts of this leguminous tree on soil fertility in arid environments. The experimental design is robust, employing a clear factorial approach (diameter class, crown radius, depth) with appropriate replication and statistical analysis. The findings are significant, demonstrating that *C. sieberiana* can enhance soil organic carbon and organic matter, particularly under mid-sized trees and at specific locations within the crown, thereby supporting its role in agroforestry systems for combating soil degradation.

For minor revision, several points should be addressed to enhance clarity and impact. First, the presentation of Table I is incomplete; the rows for crown radii (1/3R, 2/3R, 3/3R) are cut off and must be fully displayed. Second, the discussion on nitrogen dynamics where higher levels were found outside the crown—requires more nuanced explanation, linking it to the non-nodulating nature of the species and potential microbial activity. Third, the practical implications of the slight pH decrease below the aluminum toxicity threshold for crops should be briefly elaborated. Fourth, ensure all figures (e.g., Figure 1 map) are properly embedded and referenced. Finally, a thorough proofread is needed to correct minor formatting inconsistencies in the references and improve the flow between some sections. Once these revisions are made, this manuscript will be a strong candidate for publication, contributing meaningful data to sustainable land management literature.