Review Form 3

Journal Name:	**International Journal of Plant & Soil Science**
Manuscript Number:	**Ms_IJPSS_120799**
Title of the Manuscript:	**Assessment of Soil Nutrients Status Under Different Aged Walnut Orchards in Jajarkot, Nepal**
Type of the Article	

Review Form 3

PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write few sentences regarding the importance this manuscript for scientific community. Why do you like (or dislike) this manuscript? Minimum 3-4 sentences may be required for this part.	The most people were not learning on perennial crop nutrients status and management side, however this paper is long term Walnut (Juglans. sp) orchard soil fertility and nutritional status. A major component of any orchard management strategy should be soil nutrient analysis. The nutritional status of trees can be impacted by other factors, like agricultural history and weather. Accurate soil testing guides the strategic application of lime, phosphorus, and potassium for long-term soil health and crop success; furthermore, the main purpose of post-plant soil testing is to monitor soil pH since it has an impact on the nutrients that plants can access. Organic matter is essential for fertile, productive soil which several natural elements influence soil organic matter (SOM), including temperature, soil moisture and water saturation, texture, terrain, acidity, vegetation, and biomass production. These factors give to study soil health and soil fertility maintenances. In Nepal, most of the phosphorus in the traditional fertility management is supplied via compost and livestock manure. Walnut trees are sensitive to salt so it should not be fertilized with potassium fertilizer containing chlorine. The base dressing containing potassium sulphate is recommended as it increase fat, protein and aroma percent in the edible portion of walnut. This factor is to learn on phosphorus in the traditional fertility management in Nepal Country.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The title of "**Assessment of Soil Nutrients Status Under Different Aged Walnut Orchards in Jajarkot, Nepal" is suitable.** Suggested title; will be another " **Soil fertility dynamics and identify the most limiting nutrients affecting walnut productivity in Nepal"**	

Review Form 3

Is the abstract of the article comprehensive? Do you suggest addition (or deletion) of some points in this section? Please write your suggestions here.	Study Design: The research employed a randomized complete block design (RCBD) with three treatments representing different age groups of walnut orchards (1-5 years, 6-10 years, and 11-15 years), each replicated seven times across various municipalities. Three choose place (because not fertilizer application treatments in experiment, only collected soil sample on difference aged walnut orchards in Jajarkot, Nepal. The most Abstract writing style is one paragraph, do not content subtitle in abstract writing. This study aimed to assess the soil nutrient status in walnut orchards of different ages in Jajarkot district, Nepal, to understand soil fertility dynamics and identify the most limiting nutrients affecting walnut productivity.The research employed a randomized complete block design (RCBD) with three treatments (**three choose places**) (representing different age groups of walnut orchards (1-5 years, 6-10 years, and 11-15 years), each replicated seven times across various municipalities. The study was conducted in Jajarkot district, Karnali Province, Nepal, encompassing municipalities including Nalgad, Junichadey, and Barekot, from March to April 2023.Soil samples were collected from multiple depths (1, 2, and 3 feet) in each orchard and analyzed for pH, soil organic matter (SOM), total nitrogen, available phosphorus, and available potassium. Data analysis included descriptive statistics, one-way analysis of variance (ANOVA), and correlation analyses to explore relationships between soil parameters and orchard age. This study showed that significant variations were observed among different age groups of walnut orchards for soil pH, SOM, nitrogen, phosphorus, and potassium levels. Soil pH decreased with orchard age, while SOM, nitrogen, and phosphorus tended to increase with orchard age. Phosphorus was identified as the most limiting nutrient across all sampled soils, followed by nitrogen and potassium. Moreover, strong correlations were found between orchard age and soil N ($r = 0.894$, $p < 0.01$) and P ($r = 0.776$, $p < 0.01$), underscoring age-dependent nutrient dynamics. The study highlights the critical role of orchard age in shaping soil nutrient dynamics in walnut orchards. Older orchards exhibited higher levels of SOM, nitrogen, and phosphorus, indicating the accumulation of organic matter and nutrients over time. Phosphorus emerged as the primary limiting nutrient, essential for root growth, flowering, and fruiting in walnut trees. These findings underscore the importance of targeted fertilization strategies to optimize soil fertility and sustain long-term walnut productivity in the region.	
Are subsections and structure of the manuscript appropriate?	**3.1.2 Soil Organic Matter (SOM)** **3.1.3. Soil nitrogen** **3.1.4. Available Phosphorous** **3.1.5. Available potassium** **3.4. Relationship between soil organic matter with different soil parameters** Subtitle 3 and all correlated factors are good study for soil fertility status changing**.**	
Please write few sentences regarding the scientific correctness of this manuscript. Why do think that this manuscript is scientifically robust and technically sound? Minimum 3-4 sentences may be required for this part.	Soil organic matter had significant negative effect on soil pH. The positive correlation was observed between SOM and total nitrogen content (r=0.726). Luyssaert, et al. [30] also shows the comparable results. Soil organic matter and total nitrogen content are interlinked and influenced by factors such as soil microbial activity, pH, and C/N ratio. Soil organic matter had significant effect on soil nitrogen. ***The correlation between soil organic matter and available phosphorus content was significantly negative. Why? (phosphorus in the traditional fertility management in Nepal Country, said that it factor) The increasing availability of potassium leads to increase in SOM content signifies their positive correlation. Cation exchange capacity increases and potassium being of lower positive charge is easily up taken by plants in light of the increase in organic matter present in the soil. Is it to change pH and CEC? **Furthermore,** there was a substantial increase in soil nitrogen and phosphorus levels as orchards aged, contrasting with a decline in available potassium. These findings underscore the necessity for tailored nutrient management strategies to maintain soil fertility and enhance walnut orchard productivity over the long term.	

Review Form 3

	Continuous learning on this information!	
Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. **-**	**The references are appropriated and recent, however adding to study perennial plant nutrient management system and application (cover crop application, combination organic and chemical fertilizer application in orchard tree) and related papers.**	
Minor REVISION comments **Is language/English quality of the article suitable for scholarly communications?**	Yes, suitable.	
Optional/General comments	Based on this study and continuous learning. Correlation between soil fertility status and plant age were changes on walnut yield per plant, quality of walnut fruit, producing crop residue and nutrients uptake. **Simple correlation coefficient(r) among different soil nutrient parameters section** if some factors should be present reason of Significant correlations are observed between several variables at different levels of significance. Microorganism or biomass amount increase and decrease, nutrient soluble and plant uptake factors were balance or imbalance.	

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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