V. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusion

1. Differences in land use type have a significant impact (based on the T-test) on soil phosphorus levels in both the available (P-available) and potential (P-HCl 25%) fractions.
2. A clear hierarchical pattern exists in soil phosphorus levels, with the agrosilvopasture system consistently exhibiting the highest value (P-available 11.12 mg/100 g) and the monoculture system showing the lowest (3.72 mg/100 g). This results in a notable variation in phosphorus availability across different land management systems.
3. The greatest contribution to improving soil phosphorus levels comes from the agrosilvopasture system. The key factor is the diversity of organic matter inputs from combining tree, grass, and livestock components, which is not present in other land-use systems, especially monocultures.

5.2. Suggestions

It is recommended that future research not only focus on soil chemical parameters but also include soil biological factors such as phosphatase enzyme activity, soil respiration, and microbial biomass. This is crucial for gaining a more comprehensive understanding of soil phosphorus, as the phosphorus transformation process is also affected by microbial activity. By examining these biological indicators, it is hoped that further research can offer a more complete and useful picture of how land use systems support soil phosphorus availability.