# CHAPTER FIVE

## CONCLUSION AND RECOMMENDATIONS

### 5.1 Conclusion

This study evaluated the sieve characteristics of milled garri and milled millet samples, each analyzed in three replications to determine the distribution of fine, very fine, and powdery fractions. The findings revealed that both products were dominated by the fine fraction (0.45–0.60 mm), representing more than half of the total mass in each case — approximately 58% for garri and 57% for millet. The very fine fraction (0.30–0.45 mm) accounted for about 33%, while the powdery fraction (<0.30 mm) contributed below 10% of the total weight.

The ANOVA results showed statistically significant differences (p < 0.01) among the size fractions, confirming that milling and sieving effectively separate particles into distinct categories. The low coefficients of variation (below 5%) across replications indicate high reproducibility and consistency in the milling process.

The findings demonstrate that both garri and millet milling operations were highly efficient, producing uniform and smooth textures desirable for consumer use and industrial applications. The predominance of fine granules suggests optimized equipment performance and uniform processing parameters, making the products suitable for direct consumption, packaging, or further value-added processing.

### 5.2 Recommendations

1. Optimization of Milling Equipment: Regular calibration of milling and sieving machines is recommended to maintain uniform particle sizes and minimize powder loss.
2. Process Standardization: Establishing a controlled milling time and speed can improve consistency across batches and reduce the proportion of powdery residue.
3. Quality Control and Grading: Implement routine sieve analysis as a quality control step in garri and millet processing plants to ensure uniformity of texture and compliance with market preferences.
4. Adoption of Advanced Sieving Technology: Using mechanical or vibratory sieves with mesh sizes between 0.30 mm and 0.60 mm can improve separation precision and product classification.
5. Further Research: Future work should investigate the influence of roasting temperature, moisture content, and particle size on consumer acceptability, reconstitution properties, and shelf stability.
6. Training and Awareness: Small-scale processors should receive training on the importance of sieve uniformity, as it affects product quality, market price, and processing efficiency.

### 5.3 Overall Implication

This study provides a data-driven framework for improving post-milling quality control in the processing of garri and millet. By understanding particle distribution and statistical variability, producers can achieve more consistent textures, better yield efficiency, and enhanced product quality — contributing significantly to food processing standards and economic sustainability in local agro-industrial production.