



Featured Country: Nigeria

Featured Journal: Global Journal of Geological Sciences

PROMOTING ACCESS TO AFRICAN RESEARCH

[AJOL](#)
[JOURNALS](#)
[ADVANCED SEARCH](#)
[FAQ'S](#)
[REGISTER](#)

Username

Password

Remember me

or [Register](#)

[Find Journals on AJOL](#)

HOW TO USE AJOL...

- [for Researchers](#)
- [for Librarians](#)
- [for Authors](#)

OTHER RESOURCES...

- [for Researchers](#)
- [for Journals](#)
- [about Open Access](#)

[FAQ's](#)

[AJOL jobs](#)

[More about AJOL](#)

[AJOL'S Partners](#)

[Terms and Conditions of Use](#)

Like

1.4k

Send

[Nigerian Food Journal](#) :

[HOME](#)

[ABOUT](#)

[ADVANCED SEARCH](#)

[CURRENT](#)

[ARCHIVES](#)

Home >

Open Access Subscription Access

Effect of Variety and Initial Moisture Content on Physical Properties of Improved Millet Grains

AA Adebowale, GO Fetuga, CB Apata, LO Sanni

Abstract

Physical properties of agricultural materials are important for the design of appropriate equipment and systems for harvesting and post-harvest operations such as cleaning, conveying and storage. The study was conducted to determine the effect of variety and initial moisture content on some physical properties of improved Nigerian millet grains. Improved varieties of millet obtained were conditioned to different moisture contents (10, 20 and 30%) and their physical properties were determined. The grain length, width, thickness and effective geometric mean diameter increased with increasing moisture content irrespective of millet varieties, while aspect ratio (which relates kernel width and length and determines whether grains will slide or roll on their flat surfaces during handling and processing) decreased with increase in moisture content. Static coefficient of friction ranged from 0.44 – 0.99, 0.45 – 0.82, 0.40 – 0.70 and 0.37 – 0.67 for wood, mild steel, galvanized steel and glass respectively. The static coefficients of friction (an important parameter in predicting the lateral pressure on a retaining wall in storage bins or design of bins and hoppers for gravity flow) were found to increase as the moisture content increased. The study showed that variety and initial moisture content had significant effect ($P < 0.05$) on the physical properties determined. Hence, variety and initial moisture content are critical in the design of equipment for processing, handling and storage of millet grains.

Keywords

Millet, moisture content, physical properties, improved varieties

Full Text:

[EMAIL FULL TEXT](#) 

[DOWNLOAD FULL TEXT](#) 

Nigerian Food Journal. ISSN: 0189-7241