

# PROPOSING APPROPRIATE BODY COMPOSITION TOWARDS REDUCING THE EXCESSIVE LEAKAGE OF BADE POTS IN YOBE STATE

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## Abstract

*Bade pottery practices is one of the popular traditional pottery in Yobe state. It is also widely used in and around Yobe state because it is good at cooling water apart from other domestic functions. But leaking of these pots when storing water is a problem. So, buying a good pot is by luck because of excessive leaking. A research is however conducted to normalize leaking and as well retain the perfect cooling of water. The result shows that, lack of standard measurement affects pot making in the area. Suggestions were put forward on how to use standard measurement in pot making in the area.*

*Keywords: Standard; Measurement; Solution; Pottery and Problems*

## Introduction

Pot making is one of the crafts of Bade people which enable them to sustain life at the grassroots. Bade pottery is widely used in Yobe state and beyond (e.g. Niger Republic). People found Bade pottery to be very efficient in the aspect of cooling water. This is very important in the hot areas like the arid zones which cover the upper parts of Yobe, Jigawa and Borno States and extends upwards to Niger republic.

Many of the people in the areas are mostly poor and cannot afford the high price of refrigerator. Those that that afford it do not have adequate electricity from the Power Holding Company (PHCN). In this regard, the people remain in the use of clay pots for cooling water averagely enough to quench their thirst. There are different pottery center in these communities where pots are produced, but Bade pots stand out to be more efficient in terms of cooling water. This as a result of the materials combined together with clay to produce the pots.

People found that Bade pot can cool water very much most of the posts usually leak water too much especially when it is bought new. It may take between two to three weeks before leakages are adjusted to normal. This attitude tends to discourage some people from buying Bade pots. The research is based upon this problem to search for the solution of excessive leakage this will make Bade water pot more utilized in meeting the demand of the people especially in cooling water.

## Pottery Production

The main material used in Bade pottery production is clay. In some societies, clay is mainly used, while in others, some other materials are added to clay in order to produce pot.

Okunna (2004) citing Cardew (1970) said that this property is partly due to the mixture of clay used. Olaosebikan (1982) also observes that to reduce shrinkage and the risk of cracking during firing, sands, grits or potsherds (grinded) are added during kneading. This is mostly found among the Yoruba of south-

western Nigeria, where they combine coarse and fine particles of clay together.

Fatunsin (1992) asserted that, these clays (of the Yoruba) derive their name from certain characteristics they possess together. Some of the materials mixed with clay are flux which tends to make pots matured at low temperature during firing.

In Bade pottery, Oke (1999) observed that the clay used is naturally smooth with fine particles in nature. This was testified by Alasa (2005:29) that (Gashua) clay is mostly Bentonite. It has high plasticity. This clay is mixed with saw dust or millet dust and sufficient water during preparation to reduce plasticity. The pot base is then cast from a fired pot completed. Red clay is applied to the upper part as decoration which covers at least half of the height. The rim and some parts are burnished with smooth stone. It remains smooth and shining after firing. The burnishing absolutely reduces the surface space-network while the lower part of the pot remains unburnished. At firing, small amount of firewood pebbles with large dry grasses are used in an open place. The firing takes place from the evening to the following day.

### **Leakage and Cooling**

After firing, the burnt plant materials form this network space inside the wall of the pot. This thereby enables it to leak from inside easily. When the pots contain water, they do not leak the same rate because there is no standard measurement system. The mixture varies one pot to the other. Some pots leak slowly while some pots leak excessively. This fact actually discourages some people from buying Bade pots.

Though, it is the leaking of water from inside that will evaporate to cool the water. As the leaking water continually wet the pot outside, it gradually dries up, leaving cooling effect on the body. The cooling effect is extended inside the pot to cool the water. The water is cool enough to quench or subside the high rate of thirst and heat tension during the heat season. Osunlaja (2010) a chemical scientist, observed that this is possible because the chemical properties of the liquid (water) contains some ions in positive and negative forms respectively. As these properties touch each other inside the wall of the pot, cooling reaction takes place. The network space left behind after the burnt

plant materials in the pot wall enable the contact of the properties easier and faster which make the water much cooler. The water will tend to cool in any condition of weather as long as exchange of ion properties takes place between the two substances.

### **Leakage Reduction**

It is quite obvious that new pot began to reduce leaking after a week. This may continue for the next two weeks until is finally stopped. At this stage, whitish substances appear all over the other part of the pot. This is observed to be the ashes of the burnt plant fibers in the wall of the pot which the leaking water has pushed out. After some weeks, there are concentrations of greenish substances at the outer lower part of the pot. This substance is observed to be algae. Nweze (2004) corroborated by Osunlaja (ibid) stated that no water is pure except distilled. So, untreated water fetched into these pots contains more of this impurities ranging from fine sands, bacteria, algae and many other microscopic organisms. These materials finally seal up the holes as they pass through the spongy holes from time to time.

It was further enumerated that some ion properties retained in the body of the pot the pot as gain from negative electric charges in the water leak out. The leaking gradually reduces as the network holes are blocked by the materials. However, some among the pot users cannot be patient enough to wait for the time the pot stop excessive leaking; thereby resort to plastering the lower part of the pot with cement to stop leaking. This drastically reduces the cooling capacity.

### **The Problem**

It is not an advantage to lose almost half of the water in the pot at the expense of cooling water for drinking. During the mixture of materials with clay, there is no standard measure or percentage of material mixed. The potter continues to add millet dust to the clay gradually and mix them together until he thinks that it is enough; that is, he estimates the quantity. The variation in the leaking of the water by the pot when newly bought is a matter of concern. It becomes a matter of luck by chance in getting a moderately leaking pot. The problem is based on lack of standard formula.

### Methodology

The sample used for the study was ten (10) pot makers and one hundred (100) pot users respectively. Purposive sampling was used in selecting the pot makers. Similarly, simple random sampling was used in selecting the pot users.

### Discussion

From Table 1 below, respondents to questions revealed that they are pot producers since 100 % says yeas. % of people producing water pot is 90% while 10% only produce cooking pot. All the potters also revealed that they buy most of materials including clay. All of them also said that they all aware of the complaint of the buyer about their pot. 100% say yes to that question 6 and it was revealed that, potters buy their material since 100 % say yes.

According to the respondents in Table 2, saw dust and millet dust (shafts) are either mixed with clay to act as shock absorber (insulator) or forming air network within the pot wall for water passages. Ashes are used for demarcating clay from pot during casting. Red clay is the clay used for decorating the pot. It is brought from either Kano, Hadejia or Katuzu ward in Gashua town. They further asserted that, calabash is either shaped to a tool to work on pot or perforated and used as sieve to sieve millet or saw dust before use. Cherbi (beads) is used for polishing the pot. It was further observed that when too much millet dust is used with clay it causes the pot to leak excessively when used. Over heating does not cause the excessive network holes to block or cause the pot to break when applied direct heating without preheating. So also small quantity of millet dust is not adequate to mix with clay without appropriate measurement.

### General observation from the respondents

1. Some pot makers inherited the profession from their fathers.
2. When small millet dust is mixed with clay, the pot will crack when firing.

3. Temporary leaking makes pot to cool water for longer time.
4. Plastering with cement will not make the pot to cool water as expected.
5. Pot can leak for two or three weeks before finally stop.
6. The use of ashes in the mixture will reduce the stickiness of the clay during molding.

### Appropriate Composition of Clay Body

In determining the appropriate composition different pots were provided using estimate for the mixture of clay and millet dust. The first sample pot was made through usual mixing system of the potter and tagged P<sub>1</sub>. The second pot has the ratio 4:1 mixture of clay and millet dust respectively and tagged P<sub>2</sub>. The third pot has ratio 3:2 mixture which was tagged P<sub>3</sub>, while the fourth pot has the ratio 2:3 mixture of clay and millet dust and was tagged P<sub>4</sub> as well. The sample pots were fired along side with other pots by the potters.

The results are as follows:

P<sub>1</sub>, leaks excessively like other pots but can cool water.

P<sub>2</sub> crack during firing

P<sub>3</sub> leaks very slowly and cools water very well

P<sub>4</sub> leak almost as much as P<sub>1</sub>.

### Suggestion

The pot tagged P<sub>3</sub> which has the ration 3:2 of clay and millet dust was however found useful as the best pot. Ratio 3:2 mixture of clay and millet dust respectively is however suggested for the potter to use as standard measurement. These means that in the mixture, clay will take three (3) measure and millet will take two (2) handful measures.

### Conclusion

In any mixture for preparing clay, it is very much essential to determine the mixture by ratio or percentage in order to realize accuracy in achieving maximum success. Standard measurement is the only solution to this problem, and invites more customers in their pottery business.

**Analysis**

**Table 1: Number of respondents and percentage of pot makers**

No	Question	No of Yes	No of No	% of Yes	% of No
1	Do you produce pot?	10	-	100	-
2	What type of pot do you produce? a. Water pot(Yes) b. cooking pot (No)	9	1	90	10
6.	Do you buy your material?	10	-	100	-
9.	Do people complain about your pot?	10	-	100	-

**Table 2: materials used for making pot in the**

No	Question	Materials
3.	What types of material do you mix with clay to make pot	Wood dust, millet dust ashes, clay
4.	What are other materials Mix with clay to make pot?	Red clay
7.	From where do you buy your materials?	Kano, Hadejia, kazu Ward
8.	What proportion do You use to measure your material?	Too mouth quantity of millet dust by hand
11.	What causes the pot to leak water	Over heating, small quantity of millet dust

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