

**INDIGENOUS KNOWLEDGE OF WATER TURTLE (*PELUSIOS CASTANEUS*)
SOLD IN EDO STATE, NIGERIA**

Odiko A. E* and Obidike A. O.

Department of Aquaculture and Fisheries Management, Faculty of Agriculture, University of Benin, Benin City. Nigeria.

ABSTRACT: *This study was carried out to have an overview of the indigenous knowledge of water turtle sold in Edo state, using twelve major markets (Uselu, New Benin, Uwa, Oba, Yanga, Osa, Oka, Oregbeni, Oliha, Uwelu, Ogida, and New markets) in Benin City the state capital as the sampling centre. Useful investigations were initiated through oral interview and focus group discussions with certain determinative parameters in mind. These include among others, handling - holding methods, feeding stuff, slaughtering methods, and years of turtle trade, price indices and socio-cultural indices. There were three methods by which turtle were slaughtered of which putting in boiling/boiled water was the simplest and fastest. The price indices showed that turtles were sold for as low as ₦500 (\$2.00) and as high as ₦4000 - ₦ 5000 (\$13.3 - \$17.00) based on their size. Results showed that turtle sales started more than 30 years ago in the City, the socio-cultural indices revealed that turtle was used mostly for spiritual purposes, while the meat was a delicacy among people that eat this meat. With adequate management regime in place, the possibility of successfully domesticating them in this environment is high as any food consumed by man were popular feedstuffs used in feeding turtle during their holding period; in addition to different fruits like pawpaw, banana, mango and pineapple commonly available being used. The study has thus shown that socio culturally the people of the state have nothing against water turtle consumption, making it an animal protein source to be expected for the citizenry under domestication to make it readily available. The pricing of turtle could also become standardized if there is a steady supply from culture as this will in turn reduce the pressures currently placed on wild species.*

KEYWORDS: Water Turtle, Pelusios Castaneus, Standardized Price, Meat, Nigeria.

INTRODUCTION

Attempts at domesticating various fin and shell fish species have been intensified within the last decade especially in the developing countries such as Nigeria. As it has become apparent that much of the wildlife trade has become unsustainable as they are driven by high profit margins and in many cases high prices paid for rare species (World Wildlife Fund, 2006).

Many people get confused by these terms 'turtle' and 'tortoise' often use them interchangeably. Differences exist in the usage of the common terms; turtle, tortoise and

terrapiin, depending on the variety of English being used, usage according to Simoons (1991) are inconsistent and contradictory. In countries such as Britain or Australia, these terms are very specific and relate to the habitat of the animal, in North America, turtle are the aquatic or semi -

RESULTS AND DISCUSSIONS

Local name

It was gathered that most of the turtle were called *Evbuwo* locally and was sold by women (100%) who were mainly within the age range of 51-64 years old while none of them were below 20-25 years old. About 80.0% of the turtle sellers were married, 25.0% were divorced and 1.2% was widowed.

Education wise, 42.3% of the turtle sellers interviewed had primary school education, 34.6% had secondary school education and 23.1% had no educational background.

This study revealed that all the turtle sellers in Benin City were women who were mainly within 51-64 years age range while none of them was below 20-25 years old. Others were in their forties (40^{ths}), reflecting an uneven distribution of persons in their middle age and old people being involved in the trade.

Handling -

The traders' differentiation of the sexes in turtles was unanimous as they all said that the male had a hollow plastron and the female had a flat plastron. This demonstration by the marketers on the handling of turtles was in consonance with the studies carried out by De Jong *et al.* (2005) who said that the safest way to hold turtle was by grasping the base of the hind legs and the posterior edge of the carapace with the head pointed away from your body to prevent it from scratching or biting.

Feeding

The interview revealed in all the markets visited that they commonly used foodstuff consumed by man for feeding the turtle, as they readily accepted these feed after capture except for few that may take a couple of days to acclimate. At all the markets visited common available foodstuff consumed by man and edible fruits like *eba*, soaked garri, marched cooked yam and plantain, cooked corn starch, pawpaw, banana, mango, pineapple, ripe guava, water melon, among other were readily accepted. This consequently confers their ability to some extent to adapt within a relatively short time with adequate management in captivity, considering the fact that all these turtle were obtained from the wild. The ease of adaptation especially in accepting locally available food has previously been reported on African giant rat (Ajayi *et al.*, 1978), grasscutter (Ajayi and Tewe, 1980) and tortoises (Nwokoro *et al.*, 1999) from the wild in captivity, which currently is being domesticated with further scientific research work on-going in Nigeria.

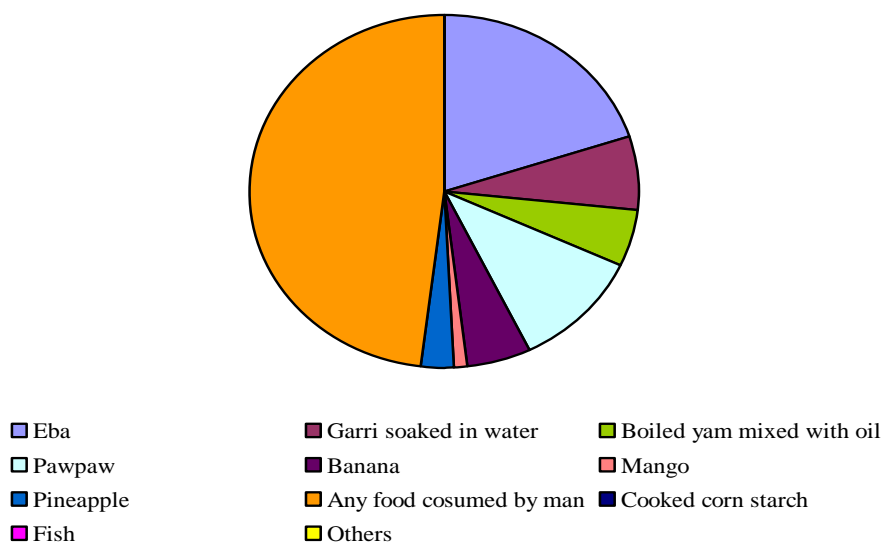


Figure 2: Feed items used during holding period

Slaughtering methods

Turtle according to the respondents could be slaughtered using any of these three forms; turning of the turtle upside down so that when it could bring out its head; using a sharp object quickly to cut off its head and then breaking/cutting the plastron into two (Uselu, New Benin

and Oba market), or putting the posterior (rectal) section in a flame to enable the turtle bring out its head and this is followed by slaughtering with knife (Ogida and Oregbeni), or by putting it in boiled/boiling water (Oba, Oliha, Santana and Osa). Apart from putting turtle in boiling/boiled water, other local methods of slaughtering turtle was similar to that reported by Nwokoro and Egere (1998) where the posterior end of tortoise were slantly placed on the lighted Bunsen burner and the heat generated caused the tortoise to bring out their heads after which a clipper was used to grasp and pull out the heads then a sharp knife was used to cut it off while working on tortoise in Benin City.

Years of turtle trade

Result showed that turtle sales started more than 30 years ago at most of these markets and that until recently most of the traders were descendants of former sellers; making it look like a hereditary trade until not too long ago (10years) people who had no family history have joined this trade.

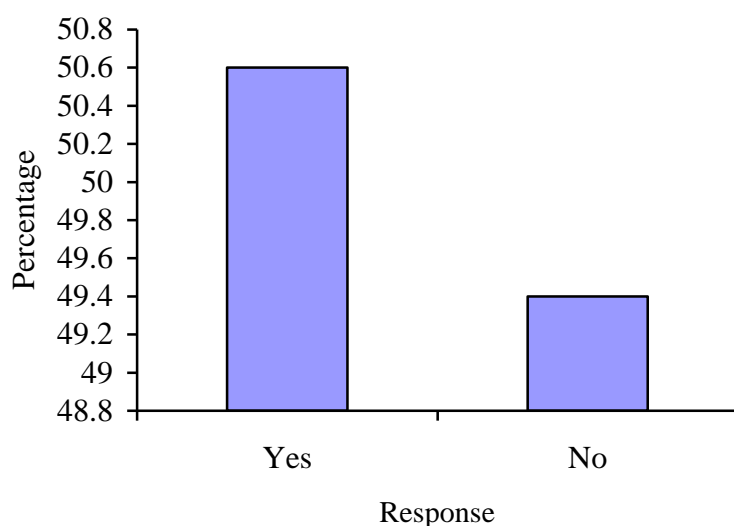


Figure 3: Previous involvement of parents in turtle trade

According to the turtle sellers at the different markets, every seller had to be registered as a member of the seller association and a major requirement is that a potential seller must have stopped bearing children before they will be allowed to sell turtle and other items sold alongside with it. According to the turtle sellers, registering as a member serves as a means of regulating the number of turtle sellers and ensures that common organizational goals were achieved through proper planning, organizing, coordinating and executing functions. A typical retailer bought an average of between 2-20 turtles from wholesalers' while some retailers bought between 25 - 50. These sets of retailers that bought these large quantities also function as wholesalers, by selling to their co-retailers when the need arise

Few sellers sold their concernment within few days (< 1 week) of purchase but majority sold

within one week to a month after purchase.

Price Indices

Turtles were sold for as low as ₦500 (\$2.00) and as high as ₦4000/ ₦ 5000 (\$13.30/\$17.00) but the exact price for which a turtle was sold was based on the particular market and the bargaining power of the buyer. Demand and supply was not affected by sex of the turtle, thus the pricing was done based more on the size of the turtle in question.

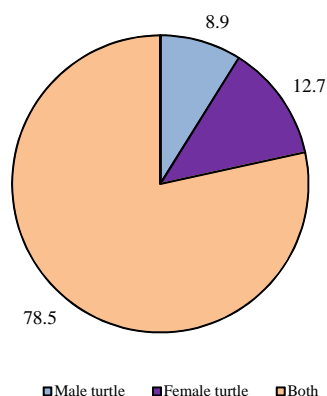


Figure 4: Effect of sex on the sales of water turtle in Benin City.

Profitability of turtle marketing in the study area, revealed that whether the turtle was in the small (0.1 – 0.3kg), medium (0.4 – 0.6kg), big (0.7 – 0.9kg) or extra large (1kg) category, the profit margin varied depending on certain factors such as; the price of the turtle from the supplier, the season of the year, the market, the bargaining power of the buyer and the forces of demand and supply. The profit in most cases could be as low as between ₦100 - ₦200 (<\$0.67) or as high as ₦300 - ₦400 (\$1 -\$1.16).

Socio-cultural indices

Socio-cultural indices revealed that the main use of turtles in the locality was more for ritual purposes and ancestral worships while very few persons especially from the riverian communities bought it to either cook or roast the meat for consumption. Turtle meat even though has been acclaimed by the respondents to be a delicacy as substantiated by Hong *et al.* (2008) report on the widely held belief that turtle meat was somehow more nutritious than other common meat items. But there was a common consensus among the sellers that though

turtle meat was very tasty, it could not be served to guest. This may not be unconnected to the size in relation to cost and the general believe among the citizenry that turtle was usually slaughtered for ritual or idol worship.

CONCLUSION

This study comes in handy and timely as it will help accumulate indigenous knowledge to help in management and conservation of caught juveniles and the possibility of domestication of available species and possible breeding of these freshwater turtles that are consumed, as freshwater turtles around the world have become threatened by their being increasingly collected for food, perceived medical purpose and pet trade.

Conclusively, it has become more obvious that turtles can adapt and survive successfully under domestication with proper management and provision of properly formulated feed,

Associated Salmonellosis. *Emerging Infect Dis.*, 11,398 – 403.

Ajayi S. S., Tewe O. O. and Faturoti E. O. (1978). Behavioural changes in the African giant rat (*Cricetomys gambianus*) under domestication. *E. Afr. wildl. J.*, 6,137-143.

Ajayi, S. S. and Tewe, O. O. (1980). Food preference and carcass composition of the grasscutter (*Thryonomys swindarianus*) in captivity. *African Journal of Ecol.*,18,133-140.

Nwokoro, S. O., Bamgbose, A.M., Nwabudike, A. U. and Egere, H.O. (1999). Observation on sale of tortoise (*Testudo sp.*) in selected market of Benin City, Nigeria. *Journal of Ethnobotany*, 2(1), 53 -56.

Nwokoro, S. O. and Egere, H. O. (1998). Handling, carcass characteristics and chemical