



MAINSTREAMING INNOVATIVE TRADITIONAL METHODS AND TECHNIQUES OF FOOD PRESERVATION AND SECURITY FOR COMMERCIALISATION AND SUSTAINABLE DEVELOPMENT AMONG THE ABAGUSII

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Citation: Okebiro, G.N. and Nyambane, A.K.(2014.) Mainstreaming innovative traditional methods and techniques of food preservation and security for commercialisation and sustainable development among the Abagusii In: *Isutsa, D.K. and Githae, E.W. Proceedings of the 2nd Chuka University International Research Conference held in Chuka University, Chuka, Kenya from 28th to 30th October,77-83pp.*

ABSTRACT

Abagusii had many effective techniques and methods for preservation of food, crops and liquid substances. The paper focuses on these methods and techniques for security and freedom from contamination. Most vital methods and techniques which were effective and free from chemical use in preservation of food have been forgotten or become extinct and there is no written research record for reference and academic purposes. This research aimed at mainstreaming and unearthing 27 methods and techniques for preservation of different types of foods and substances. Food was classified in four categories: cooked and preserved; uncooked and preserved; crops harvested and preserved; liquid and preserved. The research used practical experimental techniques and in-depth interviews of old people surviving among the Abagusii with the expertise of the methods and techniques. The key findings were: (i) vegetables were preserved for a long period and used during the occurrence of famine and droughts, (ii) crops especially beans and other cereals were preserved from attack by weevils and other rodents, (iii) cooked food and meat were preserved for long periods without contamination, and (iv) water, blood and other liquid substances were preserved for long periods effectively without contamination. Therefore, the research concludes that the methods were effective and free from chemical substances nowadays mixed in foods for preservation and security but that cause diseases. The traditional methods and techniques should be mainstreamed for the purpose of applied research, commercialization and sustainable development in the modern society.

Keywords: Traditional methods; Food security; Food preservation.

INTRODUCTION

In most cultures of the world food and health are linked and foods are often related to cultural identity. In the past societies, ate and prepared food based on crops, meats and resources that were available in the local

areas. However, with advanced technology and access to new, different and more westernized foods, many food-related traditions have changed (Path, 2007). The Gusiiland is fertile and rainfall is good (Okoth, 2011), for farming and production of different crops such as cassava, sorghum, finger millet, sweet potatoes, tomatoes and so on. Abagusii had many techniques and methods for preservation of food, crops and liquid substances effectively. The paper focuses on these methods and techniques used which were for security and free from contamination. A scientific method is a systematic study of a limited and definite subject matter, for example survey method, by technique the actual procedure of collecting and ordering data. Therefore, the traditional Abagusii used the true experimental and was effective in preservation of food. Since it was a traditional society, everything was done in traditional and primitive way of method. This was a fact and a fact in experience, the reality of the situation, the conclusion of some observations or actually present phenomenon. Therefore, the methods and techniques used among the Abagusii were facts time and were real elements of incidents subjected to hearing, seeing or experiencing. The methods and techniques of preservation of food was not new, in the past, farmers in the hot and dry Southern Sinai region of Egypt would dry foods after the harvest each summer in preparation for the winter season (Path, 2007).

Statement of the Problem

The problem of the study is most of the vital methods and techniques which were effective and free from chemical use in preservation of food are forgotten and extinct in the Abagusii society and there is no written research record for reference and academic purposes.

Objectives

The research aims to mainstream and unearth twenty seven methods and techniques for preservation of different types of food and substances. In this aspect, the paper classifies the food in four categories as follows; one, food cooked and preservation; two, uncooked food and preservation; three, crops harvested and preservation; four, liquid substances and preservation.

METHODOLOGY

The research used the practical method through experimental technique and data collected through in depth interviews from the old people surviving among the Abagusii with the expertises of the methods and techniques. This research is pure and applied research. Pure research is organized only for the attainment of knowledge and truth. Beside the research for new principles and laws with change of time and space if often becomes necessary to make a change in the methods and techniques used among the Abagusii in food preservation, into applied research. Applied research is where these methods and techniques are applied in order to solve some problems in the contemporary society.

KEY FINDINGS

The key findings are: firstly, vegetables were preserved for a long period and used during the occurrence of famine and droughts. Secondly, crops especially beans and other cereals were preserved form attack of weevils and other rodents. Thirdly, cooked food and meat were preserved for long period without contamination. Fourthly, water, blood and other liquid substances were preserved for long periods effectively without contamination. The preservation of food was done in the ancient period in the 1920s to 1930s. Scientifically; a method is an apt way of doing something for effectively and efficient results. The research classifies the food into four categories, methods and techniques used in preservations.

The first category is crops and preservation methods. The food crops which existed in the ancient Abagusii society were few such as cassava, millet, sorghum, sweet potatoes, beans and pumpkin. *Omwogo* (Cassava) scientifically known as 'manioc' mostly grown from tubers which produce tapioca (Bennett, 1989) was harvested and immediately was peeled and cut into small pieces and spread on a mat to dry. The cassava was dried for one week and it was ensured it was dry enough to be kept for a long period. The dried cassava was kept in a pot and kept *Irongo* (shelf) was a shelf traditionally constructed in a glass thatched house. Where food crops were kept was glass thatched house used for cooking specifically for preparation

of food as a kitchen, smoke spread over the house and continued to dry. The cassava was spread over the house and continued to dry the cassava and ensured there was no attack from the rodents like boil weevils the technique here is to dry the cassava.



Cassava

Pumpkin

Sorghum

Egata

The pumpkin was left to ripen until leaves of dried up this were an indication that the pumpkin fruit was ready for harvest. The pumpkin was harvested with its stalk attached to the pumpkin tree as illustrated in the following diagram. The pumpkin harvested with the holder would be kept for 3-6 months so long as the holder was intact. The pumpkins were kept in stores known as *Ekiage* granary. The pumpkins would be taken for preparation during the time of need. The technique here is to leave the stalk intact.

Amaemba (Sorghum) and *Obori* (finger millet) were harvested from the garden and dried up [Ojany and Ogendo, 1988]. Two techniques were used in preservation. One was to dry them and keep them with the husks intact and when there was need it was removed and prepared using *Ekige* was a traditional device used for removing husks from the finger millet or sorghum. If the *Ekige* was not used then the millet will be banged using a mortal.

The second technique was to prepare the millet and sorghum using *Ekige* or mortal ready for use anytime, kept in the store or granary. The *Ekige* was used in the illustrative diagram. The finger millet or sorghum with husks were removed from seeds and were spread on the traditional mat known as *Orwambo*. *Orwambo* was prepared and constructed or built using special traditional trees known as *Ebirundu*. *Orwambo* was circular in shape and since it was prepared by *ebirundu* could bend easily and twisted to give the *Orwambo* a circular shape as illustrated in the diagram. *Engata* a traditional ring circular made from the dried leaves of banana barks. The dried *Obori* (finger millet) and *Amaemba* (sorghum) was kept *Omonyoncho* or *Enyongo* a traditional pot prepared from luo land and kept at the traditional shelf in the house known as *Irongo*.

The beans once harvested were dried in the traditional mat known as *orwambo*. And was then dried up, they were removed and kept in *enyongo*. The beans were mixed with *ribu* (the ashes from firewood) to ensure they are safe from rodents like boil weevil and others. This was then also kept in the shelf (*Irongo*). The preservation of the seed for these types of crops was done by drying method and hanging in the veranda of the grass thatched houses until the period for farming started. The dried vegetables could be taken to the market points and exchange through barter trade, among the surrounding communities, during the famine and drought.

The second classification or category is vegetables and its preservation methods and techniques. The common vegetables used among the Abagusii were; *Chinsaga* (Zgetti), *Rinagu* (Managu), *Enderema* (Nderema), *Risosa* leaves form the pumpkin, Mushrooms (*amaoba/Amandegere*). *Chinsaga* was harvested from the garden and were put in a pot /*Enyongo* and boiled for five to ten minutes so that to remove chlorophyll which could make it rotten if put under the sunlight to dry up. The process was known as *egesasure* (dried vegetables). The boiled zagetti were removed and spread on *Orwambo* to dry up under the strong sunlight. Once it was ensure they were dry enough they were removed and kept in the *Enyongo* and

stored in the granary(*Ekiage*) or *irongo*. This drying up technique used in preservation of *Chinsaga* was effective and efficient to preserve the vegetable for one to two years. *Rinagu* was preserved using the similar technique or method used in preserving *Chinsaga*.

Enderema was preserved using two methods. The first was to dry up the directly spreading it under strong sunlight. This method when used the vegetables once dried up could be crashed to make powder to be used in mixing with other vegetables as an appetizer. The second method was to boil and remove the spreading it on the mat *Orwambo* to dry up. Once dried up it was removed and kept in *Enyongo* or *egetega*. The and stored in the shelf/*Irongo*.

Risosa the leaves plucked from the pumpkin tree. *Risosa* was preserved using two techniques. The first was to remove rough sparks on the leaves by peeling the skin. Then it was cut into small pieces and put into the *Enyongo* (pot) to boil for five to ten minutes. The boiled *risosa* was removed and spread on the mat *Orwambo* to dry up. Once the *risosa* was dry was removed and kept in the pot *Enyongo* and stored in the traditional shelf *Irongo*.

The second method was to pluck and remove the rough skin and dry it directly to the sunlight. After drying up it was removed, kept and stored in the shelf /*Irongo*. *Risosa* was preserved for one to two years and could be used during the time of drought and famine.

Mushrooms and its family was a special vegetable which sprout naturally once a year in specific areas or regions. Since the *amaoba/Amandegere* was to be harvested once a year they were preserved for future use. There were some for two years which mushrooms could not sprout therefore the Abagusii were keen to use the opportunity once they never sprout that year. The mushrooms were harvested and dirty soil suck into it once harvested was removed and the ready mushroom was spread on the mat *Orwambo* to dry in the direct sunlight. The dried mushrooms were kept and stored in the traditional shelf/ *Irongo* because it was having smoke from the lit fire using firewood. And the fire was used for cooking daily and kept mushrooms were kept dry throughout the preservation period. Any kind of coldness made the mushrooms to be rotten and attacked by caterpillars or worms. So long as the mushrooms were dry were preserved for one to two years. The technique was used then dried mushrooms are sold in the market stalls in towns of Kisii, Kisumu, Kakamega, and Kitale and so on.

Chinyanya/Tomatoes and *Ebiribiri* /Chillies were vegetables/traditional vegetables which added flavour or sweetness to the other vegetables. The traditional tomatoes and chillies sprout naturally in the fertile lands especially where the *Obweri bwe' Chiombe* (Manger) was established and once people shifted to another area the place remained to be fertile and was traditionally referred to as *ritongo*. *Ritongo* or fertile land was where the tomatoes(*Chinyanya chiechinyono*) the tomatoes which were transferred by birds could do well. The chillies also were sprout naturally in the same or similar area (*Ritongo*).

This two vegetables tomatoes and chillies were plucked or harvested from the tree/plant and were spread in the direct sunlight to dry up. Once the tomatoes were dry, they were removed and crushed in powder using a mortal. Once the powder (Tomato Powder) was prepared was kept in small guards (*Ekerandi*) a traditional container which was used as a bottle at that period. The tomatoes and chillies powder was preserved for a long period and no chemicals were added and were free from contamination. The technique or method is still applied in Western Kenya to preserve the surplus of tomatoes and chillies into the market. Since the farmer s do not want wastage, they use the method to preserve the tomatoes and chillies. The tomatoes and chillies powder preserved using these method are still in use in many hotels and hotels Kiosks in Western Keynote only side effects of tomatoes and chilli powder prepared is not natural because the tomatoes and chillies used to prepare it, are farm green house where chemicals are used for growing the tomatoes and chillies.

The third classification is the category of the cooked food and its preservation. The cooked foods included the *Ugali*, meat, vegetables, and porridge. The *Ugali* was cooked from *Obori* (finger millet) flour or *Amaemba* (sorghum) or *Omwogo* cassava flour. The cooked food was stored in the Abagusii bowl (*Ekee*). *Ekee* filled with *Ugali* was covered with leaves from *Omonyaboga*. These leaves were special to cover covered and once the food was covered could not allow heat out of the *Ekee* through evaporation. The food was kept warm or hot for two days. In the traditional Abagusii families food was cooked once and could be used two days or more because there was no wastage and food was not thrown away. It was wrong to throw food away, which people work for a long period to acquire or get.

Enyama/Meat was the major and significant food in the traditional Abagusii society. *Enyama/Meat* was preserved by use of two techniques or methods. One method was, the cooked meat was put near the fire place so that keep it warm and could not easily. Also meat could be roasted and kept in the containers (*Egetega /Enyongo*). The meat was the major and significant food in the traditional Abagusii society. *Enyama/Meat* was preserved by use of two techniques or methods. One method was, the cooked meat was put near the fireplace so that keep it warm and could not rotten easily. Also meat could be roasted and kept in the containers (*Enyongo*). The meat was roasted until it became dry without any liquid substance in it. The dry meat was kept for a long period more than two years and was used during the times of famine and drought.

Another method was by use of bisecting/cutting in a long length (*Ametanda*) and spreading it in the direct sunlight to dry. The meat could be spread during the day time and night time removed and kept inside the house to protect from being eaten by the dogs and wild animals. The meat dried up for a long period because it's used direct sunlight and therefore could be removed and spread in the sunlight daily until it dried up completely. This method was used to preserve meat from dead animals/cows, goats, sheep and so on. In the traditional Abagusii society, dead animals were preserved for future use. There was food security and free from contamination because most of the areas or region where animals were grazing was forested and there full medicinal value. And the animals were not easily attacked by diseases. The only common diseases on those animals was *Ekebera/Anthrax* and this kind of disease attacked cows and the medicine was to lit fire let the curfews warm and they were snuff smoke/smog from the lit *Egekuguguche*- a kind of stuff made the worms and was stuck in the leaves of tree.

Cooked porridge/ *Erongori* were kept in the African guard/ *Ekerandi*. The porridge was preserved for a long period, because the guard was polished inside by fire and made it black (*Omobiro*). These condition made the porridge was preserved for more than three days and was placed near the fire place so that to make it warm for the days required for preservation.

The fourth category was liquids and other substances and its preservation. The commonly used liquids in the Abagusii families were blood, milk, water, and alcohol, *Busaa (Amarwa)*, *Amaguta Eng'ondi* (Oil), *Sukaringuru/Sugar* Manufactured Traditionally. The blood was tapped from slaughtered animals or from the veins and living it to survive. The tapping (*Okorasa*) from the vein, was done traditionally, where the cattle or bull was tied up and the neck was stuck once in direct vein, and the blood was tapped into the container (*Enyongo/egetono*) The blood which was tapped was preserved by use of two methods. Once, the blood stirred up until it (both) and the cooked blood was roasted using oil from animals (Sheep). The roasted blood could be preserved for one week.

The second method was to roast the clotting blood (*Omokora*) Using *Amaguta/oil* and make it dry in the direct sunlight. This blood was meant to be preserved for a long period, that's why it was roasted and dried in the sunlight. The preserved blood, clotted blood (*Omokora*) was mixed with milk and used for drinking. The alcohol was prepared in the traditional method. The water was used in the preparation of alcohol on top of the big *Enyongo*. The was to be exchanged when it was boiled or heated. The first water, produced the first grade alcohol and the second water in exchange of the first water also produced the second grade

alcohol's the third water and subsequent exchange was to lead to last grade of alcohol depending on the number of water changed or exchanged the quantity of the *Omusuka* which was used to produce alcohol. The first grade alcohol was preserved for a long period because it was pure alcohol; the other grades could be preserved in the same order by reducing the period as regards its quality. Alcohol (*Echangaa/Amarwa*) was preserved for a period of three years, without contamination and secure from impurities it properly covered inside the bottle. Beer can be made from most cereals; it was made from sorghum or finger millet. The seeds of the sorghum or finger millet were allowed to germinate and after which they were dried and made into flour. The malt is boiled with water and the whole is subsequently fermented (Bunnett, 1989).

According to traditional *Omugusii*, alcohol/ *Echangaa* was used as medicine to use diseases like typhoid and fever /flu, Asthma. The patients had to take for sometime so that to cure the disease mentioned. The water which was warmer from the process of traditional alcohol distillation was used in washing clothes and the soap would remove the sterns.

Water in the traditional *Abagusii* was important and was regarded to be a 'sustainable' of life. The traditional *Omugusii* referred water to be used for development and survival. Among the *Abagusii* water was given free by *Engoro/Mumbo/Nyamumbo* (God) and should be given free to anyone who demands it, that is why they referred water is for the hyena (*Amache Neye enyangau*) meaning water can be drank by wild animals and once somebody has requested for water Was to be given without hestitaion.Since water was tapped from the spring, it was believed to be pure and was kept in the pot *Enyongo /Egetega /Egetono* 'and the *Enyongo* was to stand constantly using a traditional ring(Circular) know as *Engata*. *Engata* was prepared from the leaves of bananas. This also kept the water in the pot to be cold. In the pot water was preserved for more than one week.

Milk (*Amabere*) was another important substance for traditional *Abagusii* society. The cattle were milked in the evenings and mornings and the milk was used directly or indirectly after boiling. Since milk was the daily mail among the *Abagusii* family, they preserved it for continuous use.

The milk was preserved by use of guards and was left to be sour. The sour milk was maintained in the guard as the flesh milk was added daily as people (members) of the family continues to drink. The guard was prepared by *Omobiro*.The guard was heated inside by use of fire and was blackish inside. This made I preserve milk for a long period one to two months without washing it. *Okwogia Ekerandi* (washing of the guard) was done by using *Chinche* (small stones) put inside the guard and the guard was shaken several times to remove the dirty.*Egechieto/* bitter milk was made from the shaking of milk. This system or technique of milk preservation is prevalent all the traditional societies in Kenya and even today, it is in use, although the traditional perseveration of milk is transferred to the *modern* system of refrigeration

Amaguta (oil) was prepared from the fat part of the tail of the sheep (*Omokera bwe'Ongondi*).Once the sheep (Bull) was slaughtered, the fat tail(*Omokera*) was removed and was put in the pot (*Enyongo*) and placed in the fire to boil. As the fat (*Omokera*) boiled, the fat changed in the liquid state (oil/*amaguta*) and was tapped to the container pot and was left to cool. The process of preparering oil from the tail of the sheep is known as *Ogosaarora*. Once the liquid/*amaguta* cooled, it was preserved for a long period in the container to be used in the time of drought and famine.

Amaguta/oil was prepared by the method known as *ogosarora* meaning the removing or synthesizing of the fat into the liquid state. *Amaguta* was used in different ways. It was used for cooking, preservation of other foods and was used as a body lotion. *Amaguta*/oil was also prepared from milk by a different system or method known as '*Ogutunda Amabere*' *Ogotunda amabere* was a system which was used to shake the guard with milk several times, until the cream or fat in the milk was separated. The fat which was removed from the milk was the traditional butter or ghee among the traditional *abagusii*.The oil/butter was used

during ceremonies and was rare to be found, because the system of preparing it (*Ogotunda*) was tiresome and cumbersome, therefore people feared to prepare it.

Sugar (*Esukaringuru*) was prepared from sugar cane. The sugar cane was crashed and the liquid from the sugar cane was removed and tapped into the container. The liquid tapped into the container was boiled until it changed from liquid state to semi-solid state. The semi-solid state liquid was removed from the fire place and put or stored in the small container round or rectangular. The semi-solid state liquid in small similar size container was left to cool down. Once the semi-solid liquid cooled down, it became solid inside the small containers. The containers were removed and sugar was preserved.

Sugar can be obtained from several plants but bulk of world's sugar comes from sugar cane and sugar beets (Bunnett, 1989). The sugar tapped was persevered for a long period more than three years. This kind of sugar was known as *Esukaringuru*. This type of traditional sugar is commonly in use for preparation of alcohol in Gusii land and many parts of South Nyanza. It is also sold as traditional sweets once cut into small pieces and commonly is found in market stalls of towns in Western region.

Enyongo (pot) was the traditional Abagusii refrigerator which was used in the preservation of all Liquids and other substances. Therefore, *Enyongo* played a very significant role in the preservation of foods and security among the Abagusii Society. *Oboke* (honey) was harvested from the bees wax and stored in *egetega*. The honey was harvested from big bees which normally make beehives on top of the trees the small bees which dig a hole and make their habitat. Honey was used as medicine to cure various diseases of the chest, coughs and other minor ailments.

CONCLUSION

From the above results, the research concludes that the methods were effective, free from chemical substances nowadays mixed in foods for preservation of food and security but they cause diseases. Although time consuming, this practice provided local communities neighbouring Abagusii with accessible and affordable foods during the barter trade. Traditional dried foods are healthier than those sold from the supermarkets, because they do not have preservatives. All the foods which were preserved were exchange in commercial traditional markets in long distance trade. The market included Mabira or Koyugi, meaning modern Oyugis town by the Abagusii and Luos, respectively.

RECOMMENDATIONS

It is recommended that the methods and techniques to be mainstreamed for the purpose of applied research, commercialisation and sustainable development in the modern society. The techniques and methods in which Abagusii examined traditions around, by reviving traditional practices and modifying the current practices in partnerships with the old members and modern members in the society. The learned experiences and wisdom of the older generations to be combined or integrated with younger and the older teach young generations the techniques and methods of food preservation and security. People should choose what is best from the past traditions and blend it with what is best at the present for commercialisation and sustainable development.

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