Socio-Economic Importance of Anchote (*Coccinia abyssinica*) Cultural Foods of Western Oromia. The Case of Nedjo Woreda

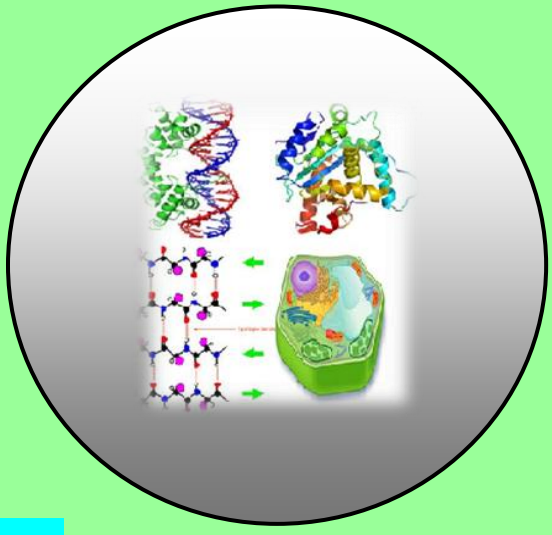
By

Jale Negassa and Desalegn Amenu

ISSN 2319-3077 Online/Electronic
ISSN 0970-4973 Print

Journal Impact Factor: 4.275
Global Impact factor of Journal: 0.876
Scientific Journals Impact Factor: 3.285
InfoBase Impact Factor: 3.66
Index Copernicus International Value
IC Value of Journal 47.86 Poland, Europe

J. Biol. Chem. Research
Volume 33 (1) 2016 Pages No. 420-425



Journal of Biological and Chemical Research

An International Peer Reviewed / Referred Journal of Life Sciences and Chemistry

Indexed, Abstracted and Cited in various International and National Scientific Databases

Published by Society for Advancement of Sciences®

J. Biol. Chem. Research. Vol. 33, No. 1: 420-425, 2016
(An International Peer Reviewed / Refereed Journal of Life Sciences and Chemistry)
Ms 33/2/04/2016

ISSN 0970-4973 (Print)
ISSN 2319-3077 (Online/Electronic)

Desalegn Amenu
http:// www.jbcr.co.in
http:// www.sasjournals.com
http:// www.jbcr.in
jbiolchemres@gmail.com

RESEARCH PAPER

Received: 31/03/2016 Revised: 05/05/2016 Accepted: 06/05/2016

Socio-Economic Importance of Anchote (*Coccinia abyssinica*) Cultural Foods of Western Oromia. The Case of Nedjo Woreda

Jale Negassa and Desalegn Amenu

Wollega University, College of Natural Science and Computational Science, Department Of Biology,

ABSTRACT

This study was done to assess the socio cultural and economic uses of anchote cultural food. The objectives of the study were to analyze economic and socio cultural uses of anchote (Coccinia abyssinica) cultural food. The data were collected based on primary and secondary data. All necessary information was collected by distributing prepared questioners to respondents from purposively selected four kebeles of Nedjo town. Then the data was presented in the forms of tables which contains data related to utilization of anchote as cultural food with respect to socio cultural and economical value. Furthermore detail study of this species is suggested in the future
Keywords: Coccinia abyssinica,

INTRODUCTION

Anchote (*Coccinia abyssinica* (Lam.) Cogn) is a tuber crop, belongs to the order *Cucurbitales,* family *Cucurbitaceae* (Asfaw *et al.,* 1992), indigenous to Ethiopia (Addis, 2005). There are about 10 species of *Coccinia* in Ethiopia; however, only *Coccinia abyssinica* is cultivated for human consumption (Endashaw, 2007). The most widely used vernacular name is Anchote, spelt Ancootee in Oromo. It is also called Ushushu (Welayita), Shushe (Dawuro), and Ajjo (Kafigna) (Demel *et al*., 2010). Anchote is found both cultivated and wild (Edwards, 1991). The total yield of Anchote is 150-180 quintals/hectare, which is in the range of the total yield of sweet potato, and potato (IAR, 1986). Anchote is endemic to the Western parts of Ethiopia highlands (Amare, 1973; Westphal, 1974).

Anchote is a valuable food source and according to local farmers, it helps in fast mending of broken/ fracture bones and displaced joints, as it contains high calcium, and proteins than

other common and wide spread root and tubercrops (Endashaw, 2007). Traditionally, it is also believed that, Anchote makes lactating mothers healthier and stronger (Abera, 1995). The juice prepared from tubers of Anchote has saponin as an active substance and is used to treat Gonorrhoea, Tuberculosis, and Tumor Cancer (Dawit and Estifanos 1991). Like many other root, and tuber crops, Anchote is rarely eaten raw (Fufa, and Urga, 1997).

Traditionally, Boiled after peeling or Boiled before peeling and/ or further sliced to uniform thickness 5 mm using a stainless steel knife. The washed tuber was boiled for about three to three and half hours, peeled and sliced to uniform thickness 5 mm using a stainless steel knife. Cooking is applied prior to consumption. Such processing can have both detrimental and beneficial effect to the nutrient content of food. Presumed purpose of such processing is to make Anchote more palatable, digestible, to inactivate enzyme inhibitors, and other anti-nutrient to qualify it for human consumption (Dawit and Estifanos 1991). In spite of the substantial level of bioavailability and sensory preference of Anchote tubers, there are no published studies. Therefore, the main objective of this research was to determine the bioavailability and sensory preference of processed (Habtamu F. *et al*., 2013).

MATERIALS AND METHODS

Nedjo Woreda is found 499km to the west direction of Addis Abeba the capital city Ethiopia. Topographically, demarcated from the east by Boji woreda, from the West by Mendi woreda, from the South by Jarso woreda and from the North direction by Benishangul regional state. Nedjo Woreda contains 24 kebele administrations. Its absolute location is between $9^0 10'$N latitude and 35^0 50'E longitude with a total coverage of more than 910.2Hek. Its elevation is 1200-1800 m above sea level, while, its rain fall is reported to be between 1600 mm-200mm and its average temperature ranges between 18^0-20c

Research Design

This study was employed the descriptive survey design whose purpose is, according to (Ezeani 1998), to collect detailed and factual information that describes an existing phenomenon. This design helps to explore new issue and to describe the characteristics of the variables in situations. In addition it will increase our knowledge and understanding ability about what happens in the study. Thus the study used cross-sectional in the sense that relevant data has been collected at purposively selected kebeles point in time.

Data Source

The data were gathered from both primary and secondary data**.** For primary data source, the researcher has prepared structured questionnaires which were developed by the researchers to address the research problems or to collect the information. Secondary data source were obtained from filed document in the human resource management department and Nedjo town culture and tourism bureau.

Population and Target Population

The study population of the present study was all peoples of Nedjo town and target population were four kebeles known in production utilization of anchote. To take sample, convenience sampling method which is types of non probability samples was used. For the purpose of this study, four kebeles were used purposively.

Sampling Procedures and Sampling Size

Prior to conducting the study permission has been obtained from the District and willingness of the respondents.

After permission has been granted, the questionnaires which have two parts – background information and response of respondents about economic and socio cultural importance's of anchote was collected through questionnaires. Sample size of this study was 30 people from each kebeles. And finally mean value was used for computation.

Method of Data Processing and Analysis

The method of data processing of the study was manual and computerized system. In the data processing procedure editing, coding, classification, and tabulation of the collected data was used. The researcher has edited the collected raw data to detect errors, omissions, checking that there is an answer for each question, and the questions were answered accurately and uniformly. In addition after the necessary data have been collected through questionnaires were analyzed statistical tools mainly tables.

RESULT AND DISCUSSION

In result and discussion percentage comparison were used for the assessment cultural and economical uses of anchote from the selected kebeles in terms of education and age is briefly stated from respondents was presented as follows with their discussion.

Table 1. Educational status.

Education status	No. Respondents	Percentage (%)
Formal education	14	46.6
No formal education	16	53.3
Total	**30**	**100**

Source: present study

As shown in table 1 most of my respondent 16(46.6%) were not attended school and 14(46.6%) of my respondents were attended class and responds the questionnaire well.

Table 2. Respondent for time of consumption.

Time of use anchote dishes	No, of respondents	Percent (%)
Frequently	2	6.6
at any holly day	1	3.3
During Infection	5	16.6
At Special Ceremony	4	13.3
Specified holyday	18	60
Total	**30**	**100**

Source: Present study

The production of Anchote has strong cultural ties with Oromo Nation, since it is used as cultural food during the finding of true cross locally called "Meskel Festival". According to Abera and Gudeta (2007). The present study finding agrees with this that majority of respondents (60%) uses anchote in their dish during Meskel festival. According to Habtamu (2013) it helps in fast mending of broken/ fracture bones and displaced joints, as it contains high calcium, and proteins than other common and widespread root and tuber crops. In present study 16 percent uses to cure infection and other (16%) used it during special ceremony like wedding, birthday other and very few respondents uses *anchote* at any holyday.

Table 3. Uses of Anchote.

Reason of using anchote	No, of respondents	Percent (%)
For treat disease	6	20
Cultural purpose	18	60
Religious order	6	20
others	0	0
Total	**30**	**100**

Source: Present study

From the above table 3:-above table indicates that 60% of respondents use anchote as a link with culture. This implies anchote is popular cultural food within this area. 60% of respondents utilize this food to cure infection and for different treatment this agrees with findings of Habtamu (2013). However others use this food during *Meskel* as it is linked with religion order.

Table 4. Respondents Preference.

Respondents Preference	No, of respondents	Percent (%)
Raw	0	0
Boiled	12	40
Cooked	16	53.3
Other	2	6.6
Total	**30**	

Source: Present study

Like many otherroots, and tuber crops, Anchote are rarely eaten raw. Traditionally, boiled after peeling or boiled before peeling and/ or further cooking are applied prior to consumption (Habtamu F., 2013). In the present study the researcher understood that most of respondents (53.3%) utilize anchote after cooking and it is also common using it after boiled but as indicated by Habtamu (2013) it not eaten raw as in table 4

Table 5. Economic Uses.

Place	Kind	Price verses utility	Respondents utility in%
At hotel	Cooked	20 -40 per dish	6
At home	Boiled or cooked	Dependent	70
Super market	Boiled or raw	15-25 per KG	2
Market place	raw	Depends on season	22

Source: Present study

There is strong inter relationship between price and utility of *anchote* and type used. Accordingly this result indicates that use it by preparing at home at low price however some peoples used already cooked at hotel with relatively high cost however it is not popular yet to use from supermarket

CONCLUSION AND RECOMMENDATIONS

Ethiopia suffers huge food and nutritional security gaps. Diversification and improvement of underutilized and neglected crops have been considered as possible solution. Among them Anchote is an indigenous root crop that is commonly produced by Oromo Nation in Ethiopia specifically Western Wollega with include the present study area. Anchote tubers have great importance in addition to useful nutrient content it has great utilities for socio economic problem improvement of the society. The present findings proved utilization of anchote tuber is becoming more popular and also with regard to its cultural linkage it is more popularly iconed in the localities. Furthermore the present finding researcher concluded that Anchote is utilized over other food for different social cultural and economic purposes.

However researcher understood that not this much emphasis has been given for usages of this food item. I recommend that it sound good if government and higher education institution focuses on improvement of this plant and make is more valuable and popular since it is more useful in many aspects of nutritional content availability and highly linked to socio-economic and culture of populations.

ACKNOWLEDGEMENTS

First of all I would like to express my deepest gratitude and thanks to my Advisor Mr. Desalegn Amenu. Then next I want to thanks my University, College and Department for their support and encouragement.

REFERENCES

Abebe, M. (1998). Nature and Management of Ethiopian Soils. Alemaya University of Agriculture, Dire Dawa, 1998.

Abera, H. (1995). Anchote-An Endemic Tuber crop. Addis Ababa University, P.75.

Abera, G. (1997). Anchote calls for attention. In: IAR newsletter. 1997. Institute of Agricultural Research (IAR). Addis Ababa, Ethiopia.

Abera, G. and Gudeta, H. (2007). Response of Anchote (*Coccinia abyssinica*) to Organic and Inorganic Fertilizers Rates and Plant Population Density in Western Oromia, Ethiopia. *East Afr. J. Sci. (EAJS).* 1 (2): 120-126.

Abera, H. (2007). Anchote-An Endemic Tuber crop. Addis Ababa University, P.75.

Amare Getahun (1973). Developmental anatomy of tubers of anchote; A potential dry land crop in Act horticulture, Technical communication of ISHS 1973.

Asfaw, Z., Nigatu, A. and Asfaw, M. (1992). Survey of the indigenous food plants of Ethiopia and food preparations from the indigenous food crop. Addis Ababa. 1992: 4.

Dawit, A. and Estifanos, H. (1991). Plants as a primary source of drugs in the traditional health practices of Ethiopia. In: Engels, J.M.M., Hawkes, J.G and Melaku Worede (eds.), Plant Genetic Resources of Ethiopia. Cambridge University Press.

Edwards, S.B. (1991). Crops with wild relatives found in Ethiopia. In: Engels, J.M.M., J.G. Hawkes & Melaku Worede, 1991. Plant genetic resources of Ethiopia. Cambridge Univ. Press, Cambridge 1991.

Endashaw Bekele (2007). Study on Actual Situation of Medical Plants in Ethiopia. Prepared for JAICAF (Japan Association for International Collaboration of Agriculture and Forestry), 2007, pp. 50–51.

Fekadu, H. (2011). Nutritional and anti-nutritions of anchote (*Coccinia abyssinica*) tubers. Lambert Academic Publishing, Saarbrücken.

Fufa, H. and Urga, K. (1997). Nutritional and anti-nutritional characteristics of anchote (*Coccinia abyssinica*). Ethiop. J. Health Dev. 11(2): 163 -168.

Fufa, H. and Urga, K. (1997). Nutritional and antinutritional characteristics of Anchote (*Coccinia abyssinica*), 1997; 11(2): 163-168.

Getahun, A. (1969). Developmental Anatomy of Seedlings and Tuber of Anchote, Coccinia abyssinica (Cucurbitaceae). PhD Thesis, University of Florida.

Getahun, A. (1973). Developmental anatomy of tubers of Anchote: potential dry land tuber crop. *Acta Hort.* No. 33.

Habtamu Fekadu (2013). Evaluation of Bioavailability and Sensory Preference of Processed Anchote (Coccinia abyssinica) Tubers in Eastern Wollega, Ethiopia.

Hora, A. (1995). Anchote-An Endemic Tuber Crop. Ms Sue Edwards, Mirutse Giday and Yilma Tesfaye (Editors).

Yambo, Y. and Feyissa, T. (2013). Micropropagation of anchote (*Coccinia abyssinica* (Lam.) Cogn.]: High calcium content tuber crop of Ethiopia. *Afr. J. Agric. Res*. 8 (46): 5915-5922.

Corresponding author: Mr. Desalegn Amenu, Wollega University, College of Natural Science and Computational Science, Department Of Biology,
Email: wadadesalegn@gmail.com