



# Unhygienic Food Processing Practices Among Small Scale Agro-Allied Entrepreneurs in Makurdi and Zaria, Nigeria: Challenges for Extension Education and Training

**Ejembi, S.A.**

Department of Agricultural Extension and Communication, University of Agriculture, Makurdi: +234(0)8035678141  
email: Amejembi@Ymail.Com

**Ivande, P.D**

Department of Home Science, University of Agriculture, Makurdi.

**Otene, V.A.**

Department of Agricultural Extension and Communication, University of Agriculture.

**Abstract:** Development of small and medium enterprises in any country is hinged on the ability of entrepreneurs to add value to the primary products available to them. Consequently, this study was a survey of technologies used by entrepreneurs in agro-allied ventures in Makurdi and Zaria vis-a-vis the challenges posed to the development of this sector. A total of 80 agro-allied entrepreneurs were sampled in Zaria and Makurdi. Structured questionnaire, and focus group discussion were used to elicit relevant information from respondents. The data from the questionnaire were analysed using descriptive statistics such as frequency and percentages, the results show that 50% of the respondents were ignorant of the technology to use while the remaining fraction accounted for other factors. Pictorial evidence show that farmers in the study locations operated with very local inappropriate technologies and in an unhygienic environment. It was concluded that respondents level of knowledge in the handling of agro-products was low. Therefore, it was recommended that intensive sensitization about the effect of the processing technologies on their health statuses be carried out by various development and extension agents/agencie as well as the establishment of Food Safety Offices in business communities to monitor compliance with food processing regulations. This will bridge the knowledge gap, thereby putting agro-allied entrepreneurs in better pedestal for business activities.

**Keywords:** Unhygienic, Food, Processing, Small Scale, Entrepreneurs, Challenges, Extension, Education

## 1. INTRODUCTION

Over the years, world over, there has been a battle for the attainment of healthy environment and consequent healthy human beings. This will certainly guarantee sustainable labour force in the agro-allied sector. Some of the diseases that have militated against the desired healthy human beings include malaria, HIV-AIDS and very recently the currently discovered vicious EBOLA or EVD which have undoubtedly ravaged the human population. Nevertheless, there are several unexplainable infections that have been contracted as a result of the unhygienic activities of small scale agro-allied entrepreneurs.

Unhygienic food processing practices refers to the unwholesome approaches toward food handling. These are practices usually not consistent with laid down rules guiding food processing (Food Standard Agency, FSA,

2014). National Agency for Food Administration and Control (NAFDAC) (2014) after observing the rising wave of impunity among small scale agro-allied entrepreneurs sounded a warning to food processors to ensure compliance to rules guiding food processing in every part of Nigeria. The small scale agro-allied entrepreneurs include farmers that are subsistent in operation and other small scale people at the secondary production stage of agro-allied products. These categories of people have adopted inappropriate technologies and environments for food handling and or processing that pose real health challenges.

The generation, propagation and promotion of agricultural production and related activities depend on the application of the principles of extension. This is possible only through forging a close link between research and extension (NARP, 1997). It is true that researchers have generated a plethora of agricultural technologies, but the capacity to meet future challenges falls far short of the needs of the farmer and others who derive their livelihood from agriculture. Thus, the development and application of appropriate technologies in the food industry represented real and grave challenges as well as great opportunities for researchers and extensionists. The success of any approach to agricultural development and improvement on the activities of small scale agro-allied business people is predicated on a thorough understanding of traditional practices and the human ecosystem in which agriculture thrives..

It is obvious, then, that extension must be a composite feature of appropriate local technologies in food production, processing, handling and utilization. For extension and small scale agro-allied entrepreneurs, there should be a realization that there are challenges to surmount and agenda to consider, especially as infections resulting from the use of inappropriate technologies as well as unhygienic handling and processing of food soars..

### 1.1 Problem Statement

The widely accepted 'African agriculture crisis' has caught the attention of practitioners, researchers, policy makers and donor agencies (Qamar. 2000). However, efforts to develop technologies to increase food processing have been disappointing mainly due to the

environment and a poor understanding of the socio-economic factors of agriculturists/farmers and small scale agro-allied entrepreneurs.

The general campaign today among governmental, non-governmental and community based organization is against deadly diseases such as HIV/AIDS and others that have caught global attention. This campaign has not helped much in trying to prevent diseases as hundreds of people are still dying of rather avoidable deaths in the rural areas and among practicing farmers and agro allied business people in peri-urban centres as a result of unhygienic food processing practices. This campaign needed to focus on the improvement of business environments of the small scale agro-allied entrepreneurs as this enhances their income and consequent improved social standards. This study therefore, was an attempt to identify some of these unhygienic practices as well as analyse their effects on the health status of consumers in Makurdi and Zaria, Nigeria.

## 2. METHODOLOGY

This study was conducted in Makurdi and Zaria, Nigeria. A total of 80 food processors were selected through simple random sampling technique. The study was undertaken in these areas because of the people's active involvement in agriculture as well as their proximities to the faculty of Agriculture, Ahmadu Bello University, Zaria and University of Agriculture, Makurdi respectively that are charged with the responsibility of technology development and transfer to farmers. The data collected were presented both in pictures and frequency tables with respect to food handling in order to show the actual technology adopted by respondents for food processing and its implications on their health status and the challenges for extension education and training.

## 3. RESULTS AND DISCUSSIONS

A survey of different food handling practices such as meat processing, grain and fruit vegetable storage, processing of cassava into *gari* and *alubo* were carried out and presented as follows:

The pictures below show some butchers at the Samaru market slaughter house. Plate 1 shows how slaughtered animals especially goats were roasted for consumption. This was done using condemned tyres with lots of smoke since they do not usually burn well. According to the butchers, this approach has the advantage of retaining heat and fire for longer periods, it constitutes major source of contamination which has adverse effect on the health of the consumers. This corroborates CTA (2002) report that smoke contains high volume of afla toxins which are toxic substances that produces or initiates carcinogenesis. Plate 2 shows a makeshift abattoir for dressing chickens. From the picture, it is observable that the environment is a threat to the health of every consumer, especially that there are no proper waste disposal arrangements in the environment. Both consumers and other traders within the environment

are at risk of contamination from these butchers' activities.



Plate 1. Butchers roasting products with condemned tyres



Plate 2. Unkempt Public Meat (Chicken) Sales Point

Apart from animal products, some fruits and vegetables were also on display under very unhygienic condition. These products are usually poorly handled due to inadequate facilities available to farmers. Consequently, they rot away easily as they are not usually disposed of properly, thereby contributing to environmental pollution. These polluted environments become habitats to disease vectors such as flies and mosquitoes.



Plate 3. Tomatoes On Display For Sale In Samaru Zaria

Heap of beans and other grains in their storage houses apart from the fact that their cleaning processes were crude and unsafe as the respondents stated that they hardly wear any mask; they harbour fungi as a result of moisture absorption. This exposes the farmers to direct effect of

inhaling mycotoxic substances which are pneumoconiotic. The farmers/traders believe that once grains are fumigated can be kept even in an exposed environment as the incidence of insect pests would have been controlled. But a more dangerous effect of this action is the occurrence of mycotoxins which are caused by fungi. This happens when there is high moisture absorbed by the grains. According to FAO (2004), tolerance levels for aflatoxins may range from 4 - 50 µg/kg (parts per billion). This fraction they said may reduce as knowledge of mycotoxins and analytical technique improves. The almost unlimited exposure period of the grains may cause them to absorb moisture of more than this recommendation.

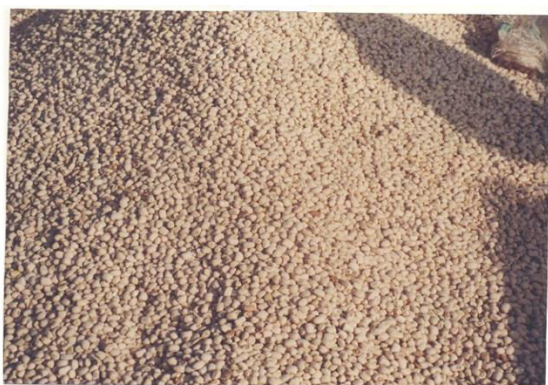


Plate 4: Beans In Wurukum Market, Makurdi.

Cassava is a very important source of carbohydrate and ethanol; it is processed into *alubo*, *gari*, *akpu*, chips among other products. However, cassava processing into *alubo* and *gari* are discussed below. To process cassava into *alubo*, the respondents said that they peel and soak the cassava to reduce the starch content after which it is removed for sun drying as shown in the picture below. Due to inadequate drying facilities, it is dried along the roads and any empty space(s). This exposes the products to contamination by both man and animals, as goats and chickens drop their faecal wastes on them which could be an infection source for zoonotic diseases.



Plate 5. Alubo Dried on an Available Space

To process *gari*, the cassava is grated after peeling, the paste is usually pressed using a pressure jack to remove the excess cyanide and moisture. These cyanide materials

are not hygienically disposed thereby polluting the environment which poses health hazard to people.



Plate 6. Gari Processing Spot.

Table 1 presents causes of use of inappropriate technology in the study areas. The results in the table show that ignorance was the main cause of using inappropriate technology cum unhygienic food processing in the study areas. However, a good fraction (30%) of the respondents indicated that carelessness on the part of food processors is responsible. Although, this was not the view of the majority, it appears a good explanation for uses of these technologies. This is because, the emphasis was on indigenous technology which if properly applied could prevent unnecessary infection.

Table 1. Causes of use of inappropriate technology (n = 80)

Causes	Percentage
Ignorance	50.0
Carelessness	30.0
Poverty	11.7
Inadequate infrastructure	8.3
Total	100.0

#### 4. CHALLENGES FOR EXTENSION EDUCATION AND TRAINING

The global campaign has been against HIV/AIDS, as it has claimed so many lives, thereby depleting labour force. However, farmers' attitudes towards themselves, environment and their products have a more devastating effect than HIV/AIDS. Most often, poverty is blamed for this. It is important to note that the poverty that is suffered here is mental and psychological. And this is where the role of extension education and training is significant to empower the people with the requisite knowledge on how to use appropriate technologies for improved product handling.

Agriculture in all its varied manifestations is the largest sector of the economy and its mainstay, employing at least 70 percent of the rural labour force. It is common knowledge that small-scale farmers and their families are responsible for over 90 percent of the agricultural



activities in the country. Relying on agricultural practices that are culturally based, they use traditional methods and rudimentary tools for production, processing and storage (Ejembi, 1998). These activities, regarded merely as a way of life, are labour-intensive and energy-sapping, leading to the perception of agriculture as drudgery fit only for drop-outs.

It is a fact that the vagaries of seasonal variations, low disposable incomes, and poor living conditions create an environment in which adoption of externally generated technologies represents a high risk proposition. Limited by these factors, the small-scale farmer uses poly-cultural practices, food processing, preservation, marketing as well as consumption and other indigenous ingenuity to live off led to a wrong impression and conclusion to wit that farm people are backward and unresponsive to recommended innovations. Although the poor adoption of agricultural technologies by resource poor farmers has been attributed to weak technology transfer or ignorance of farmers, it has become very clear in recent times that neither the farmer nor technology transfer was responsible for low adoption rates, problem identification and technology generation. It has now been recognized that most improved technologies that have not been widely adopted are simply inappropriate for resource-poor farmers. Extension agents and agencies need to appreciate the wealth of scientific knowledge that small-scale farmers have so this indigenous knowledge can be used with healthy precautions.

Development of appropriate local technologies for the food industry requires a complex of research and development activities. Technical and socio-cultural factors are much more difficult to tame. Socio-cultural factors exert enormous influence on the involvement of farmers especially if it is desired that participation be voluntary, a tried and tested basis for widespread adoption and sustainability.

Development of appropriate local technologies for applications in basic agricultural production and food industry requires real change in the tasks of designing, manufacturing and disseminating the appropriate tools, implements, machinery, and appliances required to reduce the drudgery of primary agricultural production, extension of shelf-life, addition to value and profitability of processed foods. The reasons are that until very recently, agricultural development was thought of as rather being quite straightforward. Communities were simply told what was next on the development agenda. Their choice was reduced simply to take-it-or-leave-it. Results of development projects based on such a paradigm tended to be poor, since target groups were not likely to feel a sense of ownership of externally imposed technologies.

## 5. CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it was concluded that, orientation that food processors had about processing has been responsible for their unhygienic food processing, and that they did not understand the implication of some

of their actions. Consequently, aggressive extension campaigns through their various unions are recommended to change their unhygienic orientation. Food Safety Offices should be established among the business local communities and effectively empowered them to sanction defaulters.

## REFERENCES

- 1] Ejembi E.P. (1998). Farm Management and Extension in Benue State: Policy issues. In 'Situation Analysis of Benue State Agricultural and Rural Development Policies'. Proceedings of workshop organized by the University of Agriculture and Benue State Ministry of Agriculture, Makurdi on October 8, 200p.
- 2] Food and Agriculture Organization (FAO) (2004). "Dimitra Project – Rural Women and Development". [www.fao.org/sd/dimitra](http://www.fao.org/sd/dimitra).
- 3] Food Standard Agency (FSA) (2014). Unhygienic Practices. [www.food.gov.uk](http://www.food.gov.uk) retrieved on 25.11.14. NARP (1997). National Agricultural Strategy Plan 1996-2010. Department of Agricultural sciences, Federal Ministry of Agriculture, Abuja, Nigeria, pp
- 4] Odebode, O.S. (2004). Effective Communication Teaching Methods in Technology Transfer in Nigeria: sweet potato processors experience. [www.isti.org/04-winter/abstract3.html](http://www.isti.org/04-winter/abstract3.html).
- 5] National Agency for Food Administration and Control (NAFDAC) (2014). "NAFDAC Warns Bakery Owners Against Unhygienic Practices". [www.thetidenewsonline.com](http://www.thetidenewsonline.com) retrieved on 24/11/2014.
- 6] Qamar, M.K. (2000). Agricultural Extension at the turn of the Millennium: Trends and Challenges. Human resources in Agricultural and rural Development, Food and Agriculture Organization, Rome, pp159-170.
- 7] Technical Centre for Agricultural and Rural Development (CTA) (2002). 'Gender and Agriculture in the Information Society'. A Special report of a CTA meeting. Wageningen, The Netherlands: CTA, pp. 8 – 12.