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Igene, Sedibe, Van der Westhuizen
& Solomon.

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PROCESSORS PREFERENCE AND EFFECTIVENESS OF EXTENSION TEACHING METHODS USED BY RAW MATERIAL RESEARCH DEVELOPMENT COUNCIL FOR DISSEMINATION OF SHEA BUTTER PROCESSING TECHNOLOGIES IN MORO LOCAL GOVERNMENT AREA OF KWARA STATE NIGERIA.

Igene, L.⁷, Sedibe, M. M.⁸, Van der Westhuizen, C.⁹ & Solomon, O.¹⁰

Corresponding author: L. Igene, Email: igenelucky@gmail.com.

ABSTRACT

This study assessed shea butter processors preference and effectiveness of extension teaching methods used by Raw Material Research Development Council (RMRDC) for dissemination of improved processing technologies in Moro Local Government Area of Kwara state, Nigeria. Data were collected from 74 respondents selected through snow-ball sampling technique with a structured interview schedule and analysed using frequency count, percentages and means. The results show that all the processors were females between the ages of 31 and 50 years. About 70.3% of them were married whilst 52.7% had no formal education. Many of the processors had more than 11 years of experience in shea butter processing and were capable of making between ₦6,000 to ₦15,000 per month from sales of shea butter. The results also show that only group contact method was used for dissemination of improved processing technologies while group discussion was perceived to be very effective in acquiring skills hence it's most preferred by the processors compared to other group teaching methods. It is therefore, suggested that individual and mass media contact methods be used along with the group contact method in teaching processors, as this will have the advantages of reaching different age and social groups, a situation that will make all groups access improved shea butter processing technologies.

Keywords: Improved processing technologies, extension methods, shea butter, processors, Kwara State.

1. INTRODUCTION

Extension education is the primary process through which farmers can learn the reason for change, the value of change, and the results that can be achieved through change (Okunade, 2007:282). Extension is a type of education that is functional rather than formal and its main task is to convey meaningful information to farmers. It is the major source to make farmers aware of alternatives from which they can choose the most desirable. Furthermore, it exposes them to different methods that are available for carrying out their farming and other operations (William, Fenly & Williams, 1984:77). To achieve this, extension uses a variety of teaching methods in training the rural people with the notion that the more variety in the ways of a topic

⁷ Department of Agriculture, Central University of Technology, Free State, South Africa. Email: igenelucky@gmail.com. Tell: +2348068012422.

⁸ Department of Agriculture, Central University of Technology, Free State, South Africa. Email: msedibe@cut.ac.za. Tell: 0515074054.

^{9,3} Department of Agriculture, Central University of Technology, Free State, South Africa. Email: cvdwesth@cut.ac.za. Tell: 0515074051.

¹⁰ Extension Division, Nigerian Institute for Oil Palm Research, P.M.B 1030, Benin City-Edo State, Nigeria. Email: segunsolomon05@yahoo.com. Tell: +2348034732739.

being presented and practised, the quicker the people tend to grasp the subject (Okunade, 2007:282).

The shea-tree (*Vitellaria paradoxa*) grows in the wild and it is widely distributed around the Savannah region of Nigeria where oil palm cannot grow due to low rainfall (GTZ, 1986:2). It grows side by side with food and cash crops, and it is widely known, valued and exploited by the people in all the areas where it grows. The major producing countries in the world are Mali, Burkina Faso, Benin, Senegal, Ivory Coast, Ghana and Nigeria.

In Nigeria, fruits of the shea tree are gathered at the end of the rainy season and the main processing steps involves; collection, selection, washing, drying and extraction of oil. The extraction process has an important socio-economic role in Nigeria. A significant part of the local population (of largely women), directly or indirectly depend on shea nut collection and butter extraction for sale at the local or export markets. This generates employment and income. Shea nut oil extraction also contributes to the socio-economic organisation of large extractive areas by reducing rural-urban migration.

The demand for this product has increased in recent years as cosmetic and personal care companies in European Union (EU) and the United States (US) have increased the use of shea butter in their products, necessitating Nigeria and other West African countries to go into the export of shea products (Tiamiyu, Adagba & Shaahu, 2014:223). At present, the main industrial consumption is in Europe, Japan, and Northern America (Ferris, Collinson, Wanda, Jagwe & Wright, 2001:4).

Despite its huge and wide usage, shea butter being processed in Nigeria is characterised by low quality and quantity. The inefficiency of the processing techniques lowers the quantity and quality of shea butter availability in the market. However, the Raw Material Research Development Council (RMRDC) had developed some improved processing technologies and transmitted same technologies to processors in Moro Local Government Area of Kwara State (Daniel, Olafimihan, Kwaya & Odejide, 2005; as quoted by Matanmi, Adesiji, Olasheinde & Oladipo, 2010:21). These improved processing technologies were introduced to eliminate the drudgery that is associated with indigenous shea butter processing and to boost the production of high-quality shea butter in Nigeria.

RDMRDC is an agency in the Federal Ministry of Science and Technology with the mandate to promote development and utilisation of Nigeria's industrial raw materials. Since 1987, RMRDC has been in the pursuit of this mandate (Matanmi *et al.*, 2010:21). Through consistent efforts, hammer mill, corn mill and kneader machine were developed by RMRDC and transferred to processors for use (Peter, 2010:10).

In the same vein, the Council had been working with different groups in shea butter producing areas, mostly aiming at practical training and technical skills development of processors. However, it has been argued that the success of any nation's agricultural development endeavour depends largely on the extension system in place (Madukwe & Anyanwu, 2000:87). Agricultural extension plays a key role in raising agricultural productivity by offering technical advice, helping farmers identify challenges and prospects, sharing information and enhancing group formation. Cole, (1981:29) asserted that the major function of the extension agent in this process is teaching. In order to make the teaching-learning process an effective one, the onus lies on the extension agent to choose and use the most effective method or a combination of

methods that will be most fitting to the social, and economic peculiarities of his audience and their environment (Okoedo-Okojie, 2015:15).

Extension teaching methods are the devices used to create situations in which meaningful communication can take place between instructor and the learners. They are methods of extending new knowledge and skills to the rural people by drawing their attention towards them, arousing their interest and helping them to have a successful experience of the new practice (Okoedo-Okojie, 2015:15). These methods according to Garforth (1993:247) and Okunade (2007:282) can be classified into three groups namely individual contact method, group contact method and mass media contact method.

The individual contact methods are usually superior for conviction and action because of face-to-face relationship of teacher and learner, for example farm and home visits, office calls, telephone calls, correspondence and result demonstration (Okunade, 2007:282).

Group contact methods involve a face-to-face contact with extension agents and farmers sharing a common interest in group referred to a farmer group. Mahboubi (2010:1065) describes the group extension method as involving an engagement of trainers in a relationship with the trainee clients. This method provides an opportunity for the exchange of ideas, for discussion on problems and technical recommendations and finally for deciding the future course of action. The group contact method includes demonstrations, conference/general meetings, lectures, group discussions, exhibitions, farmer's day, field day brainstorming and buzz groups.

Mass media methods attract attention and stimulate the interest and desire for further information. They are the methods used to reach many people at the same time at different locations. Examples are bulletins, circulars, letters, leaflets, literature, newspaper, radio, television and cinema. These methods cover maximum number of people in the shortest span of time.

Keeping in view with the above-mentioned facts, this study was thus conducted to investigate processors preference/effectiveness of teaching methods used by RMRDC for dissemination of improved shea butter processing technologies in Moro LGA of Kwara state, Nigeria.

1.1. Objective of the study

The major objective of the study was to determine processors' preference and effectiveness of extension teaching methods used by RMRDC in the dissemination of improved shea butter processing technologies in Moro LGA of Kwara State, Nigeria.

The specific objectives were to:

1. Examined the socio-economic characteristic of the respondents.
2. Ascertained the extent of use of various extension teaching methods by RMRDC personnel.
3. Determine the respondents' perceived effectiveness of extension teaching methods in acquiring skills.
4. Determine the respondents' perceived preference for extension teaching methods.

2. METHODOLOGY

The study was conducted at Agbaku-Eji community in Moro Local Government Area of Kwara State, Nigeria. The study was carried out in this community due to the presence of improved shea butter processing technologies. The population for the study consisted of the processors who were involved in shea butter processing. Snow-ball sampling technique was used to select 74 processors that had had training experienced on improved shea butter processing technologies. The data were collected with the use of a well-structured and validated interview schedule (Wingenbach, Boyd, Lindner, Dick & Haba, 2003:30). Effectiveness of the extension teaching methods was measured in a 4-point rating scale of; very effective, effective, poorly effective and not effective coded 4, 3, 2 and 1 respectively. For a given extension method, the mean was computed by taking the sum of the products between the number of responses and grade point and then divided by the total number of responses. Ranking in ascending order was then used to categorise the effectiveness of the extension methods. In the same vein, a three-point Likert-type scale of; most preferred, less preferred and not preferred coded 3, 2 and 1 was utilised to record the perception of the processors regarding the preference of various extension teaching methods. Ranking in ascending order was also used to categorise processors preference for extension teaching methods after obtaining the mean value. Descriptive statistics such as frequency distribution, percentages and mean were used to further analyse the data collected.

3. RESULTS AND DISCUSSIONS

3.1. Socio-economic characteristic of respondents

Table 1 shows that all the respondents were female. This finding is in line with the findings of Fakayode, Akangbe, Akinseye & Adesuyi (2013:204) that females were more involved in the processing of shea butter than males. Also, table 1 indicates that about 68.9% of the respondents were between the ages of 31 and 50 years. This implies that the majority of the respondents were less than or equal to 50 years, which means that they are in their active and productive stage of their lives, so there is a lot of prospect for the shea butter industry in the area. Furthermore, table 1 show that 70.3% of the respondents were married while 18.9% were single, which implies that a greater percentage of the respondents that are engaged in shea butter processing were married. More than half (52.7%) of the respondents had no formal education, 24.3% had quranic education, 13.5% had primary education and 9.5% had secondary education. This is an indication that large percentages of the respondents in the study area have a low level of education, which may hinder their adoption of improved processing technologies. Finally, 75.6% of the respondents had more than 11 years of processing experience while 51.4% of them realise between ₦6,000 to ₦15,000 per month from sales of shea butter. This means that they are making a living from the sales of shea butter.

Table 1: Socio-economic characteristics of respondents (N=74).

S/N	Variables	Frequency	Percentage
1	Sex		
	Male	-	-
	Female	74	100
2	Age		
	Below 20	3	4.1
	21 – 30	9	12.2
	31 – 40	30	40.5
	41 – 50	21	28.4
	Above 50	11	14.8
3	Marital status		
	Single	14	18.9
	Married	52	70.3
	Divorced	5	6.7
	Widowed	3	4.1
4	Education Level		
	No formal education	39	52.7
	Quranic	18	24.3
	Primary	10	13.5
	Secondary	7	9.5
	Tertiary	-	-
5	Years of processing experience		
	1 – 5	5	6.8
	6 – 10	13	17.6
	11 – 15	20	27
	Above 15	36	48.6
6	Monthly generated income		
	Up to ₦5,000	-	-
	₦ (6,000 – 10,000)	22	29.7
	₦ (11,000 – 15,000)	38	51.4
	₦ (16,000 – 20,000)	10	13.5
	Above ₦ 20, 000	4	5.4

Source: Field Survey, 2016

3.2. Extent of use of various extension methods by Raw Material Research Development Council (RMRDC) personnel

The data presented in table 2 shows the extent of the use of various extension methods by RMRDC personnel for the dissemination of improved processing technology in Moro LGA of Kwara, state. The results in table 2 indicates that demonstration ($M=4.8$) was the most used extension teaching methods by RMRDC in the dissemination of improved processing technologies. This finding agrees with Okunade (2007:284) who opined that method demonstration was among the most used by extension workers in educating farmers in Osun state. Other well used teaching methods include lecture ($M=4.7$) and group discussion ($M=4.7$). In addition, table 2 also shows that individual and mass contact methods were not used in the

study area. However, the uses of these methods are capable of enhancing training and adoption of improved shea butter processing technology in the study area.

Table 2: Extent of the use of various extension methods by RMRDC personnel (N=74).

Extension methods	Weighted score	Mean	Rank order
Individual contact			
Telephone calls	-	-	-
Personal letters	-	-	-
Group contact			
Lecture	350	4.7	2 nd
Demonstration	357	4.8	1 st
Group discussion	340	4.6	3 rd
Exhibition	-	-	-
Farmer's day	-	-	-
Conference/general meetings	-	-	-
Workshops	-	-	-
Mass contact			
Radio	-	-	-
Television	-	-	-
Cinema	-	-	-
Literature	-	-	-
Internet	-	-	-
Newspapers	-	-	-

Very low = 1, low = 2, Average = 3, high = 4, Very high = 5

Source: Field Survey, 2016

3.3. Respondents' perceived effectiveness of extension teaching methods in acquiring skills

Table 3 shows respondents perceived effectiveness of extension teaching methods used by RMRDC personnel in acquiring skills. The result reveals that group discussion with mean value of 3.86 ranked 1st, followed by demonstration ($M = 3.58$) and lecture ($M = 3.41$) at 2nd and 3rd position respectively.

Table 3: Rank order of extension teaching methods by skill (N = 74).

Extension teaching methods	Weighted score	Mean (M)	Rank order
Lecture	252	3.41	3 rd
Demonstration	265	3.58	2 nd
Group discussion	286	3.86	1 st

Not effective = 1, poorly effective = 2, effective = 3, very effective = 4

Source: Field survey, 2016.

3.4. Respondents' perceived preference for extension teaching methods

Table 4 shows processors preference for extension teaching methods. The result shows that the most preferred extension teaching methods by the respondents was group discussion ($M = 2.78$) ranked 1st, demonstration ($M = 2.62$), lecture ($M = 2.57$), workshop ($M = 2.50$) and farmer's

day ($M = 2.35$) ranked 2nd, 3rd, 4th, and 5th respectively. These findings are in agreement with those reported by Bajwa, Ahmed & Ali (2010:295). Processors preference towards group discussion implies that they learn best when they are made participants of learning process in a democratic and friendly atmosphere.

Table 4: Perception of respondents' preference for extension teaching methods (N = 74).

Extension teaching methods	Weighted score	Mean (<i>M</i>)	Rank order
Lecture	190	2.57	3 rd
Demonstration	194	2.62	2 nd
Group discussion	206	2.78	1 st
Exhibition	168	2.27	6 th
Farmer's day	174	2.35	5 th
Workshop	185	2.50	4 th
Radio	164	2.22	8 th
Television	156	2.11	9 th
Cinema	-	-	-
Internet	-	-	-
Telephone calls	149	2.01	10 th

Not preferred = 1, Less preferred = 2, and Most preferred = 3

Source: Field survey, 2016.

4. CONCLUSION/RECOMMENDATIONS

Considering that all the respondents were women, when it comes to training in processing technologies extension agents should take into account that women may have other (different from men) daily household and family commitments. The training schedules will thus have to be synchronised to suit their daily routines. The educational level of the women is fairly low. The training efforts will have to take into consideration that extra time may be needed to explain the technologies in more detail and on applicable fairly low levels to fit their comprehension. The manuals and other information may also be presented to fit their level of understanding. Although the respondents are well experienced in processing of shea butter, they could still benefit from certain elements of the training programme. There would be a need to evaluate the trainees to determine which elements they have experienced in and are capable of, and in which fields (especially if new technologies are to be introduced) they would need extra training. The training should thus have to be tailor made to meet the unique needs of the trainees. The trainees identified amongst others, exhibitions and farmers' days to use as appropriate teaching platforms. Unfortunately, they are not used to it, and since the extension staff is not knowledgeable to apply these methods due to insufficient experience regarding the unique challenges that each method may have. In-service training of staff may be needed, and management should take note of it as extra funds may be needed. The same will apply to mass media. For example, how to mould relevant information into a need driven and consumable article in brochures/ new letters etc. A Farmers' day is mainly regarded as a tool to use during the awareness stage and therefore it should be planned, designed and applied with this idea in mind. Extension staff should be capable of using it accordingly to achieve this goal. Persuasion efforts should mainly be focussed on during individual contact opportunities, and extension staff should also be able to succeed in such situations and will need extra training if they cannot handle the challenges associated to these methods.

Based on the conclusion of this study, it is recommended that individual and mass media contact methods be used along with the group contact method in teaching respondents. This will have the advantage of reaching different age and social groups. Such a situation will make all groups access improved shea butter processing technologies.

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