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PREFACE

To combat the dearth of medium for dissemination of knowledge coupled with invasion of the agricultural discipline with low quality and non viable Journals, The Faculty of Agriculture and Life Sciences, Federal University Wukari established the Federal University Wukari Journal of Agriculture and Life Sciences (FUWJALS) along the lines of global standards and acceptable best practices.

The FUWJALS is a peer reviewed biannual Research Journal in Agricultural and Life Sciences that is intended to publish good quality research in all areas of Agriculture and Life Sciences. The FUWJALS will augment research efforts in the Universities, Research Institutes and the Industries, to advance the course of human development through information dissemination and knowledge acquisition.

Given the infrequency of publication of most Journals, FUWJALS hopes to make a difference by strengthening agricultural and life sciences discipline to integrate our knowledge with other fields, thereby providing more choices for researchers, students and teachers, through interdisciplinary work. However quality remains our watch word measurable by on-line submission of manuscript, early review process, expedite publications of your articles at lower cost and e-prints.

It is my hope that this maiden edition will mature into the dreams of the founding fathers of the Faculty and the University. We are convinced that FUWJALS will provide the opportunity to present your edge cutting and authentic, insightful scientific information on the latest novel advances.

On behalf of Federal University Wukari, I am pleased with this innovative stride and very hopeful of its continuous contribution to quality knowledge in the Nigerian Universities and Research Institutes. We look forward to your submission/critiquing to upgrade our future editions.

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HEALTH HAZARDS ASSOCIATED WITH MILLING OF AGRICULTURAL PRODUCE BY WOMEN IN ILORIN SOUTH LOCAL GOVERNMENT AREA, KWARA STATE, NIGERIA

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ABSTRACT

This study was carried out to analyze the health hazards involved in the milling of agricultural produce by women in Ilorin South Local Government Area, Kwara State, Nigeria. 2-stage sampling techniques were employed to select 120 respondents from the study population and questionnaire was used to elicit data from the selected respondents. Descriptive and inferential statistics were used to analyze the data collected. The Findings showed that 30.8% and 26.7% of the respondents were within the age range of 20-35years and 35-45years respectively. The result also showed that 76.7% of the respondents were married. In terms of health challenges, 33.4% of the respondents indicated rhinitis, 33.0% had wheezing, 26.7% had headache, 17.5% had cough while 12.5% indicated back pain. Chi-square analysis revealed that there was a significant relationship between the severity of constraints against the use of preventive measures and respondents' age ($X^{2=}1.001$), educational level ($X^{2=}3.402$) and income ($X^{2=}2.940$). However, there was no significant relationship between the severity of constraints against the use of preventive measures and the respondents' working experience and household size. The study concluded that women involved in milling of agricultural produce in the study area suffered from a number of health challenges due to poor skills in usage of preventive and safety measures. It is therefore recommended that extension agents in Ilorin south Local Government Area should build the capacity of women agro-millers on the necessary skills needed for effective use of safety and preventive measures in milling agricultural produce.

Keywords: Milling, Agricultural produce, Hazards, Preventive measures and Women

1.0 INTRODUCTION

Agricultural sector plays an important role in the economy of most countries in Africa and Asia. Food processing provides enormous opportunity for acceleration and promotion of sustainable agriculture in the rural communities (Ihekoronye and Uzomah, 2011). Rural based small-scale agricultural millers occupy an important position in the day to day survival of the rural economy. The contribution of this informal sector to the national economy cannot be over-emphasized particularly in developing countries including Nigeria. The role of the agricultural millers along the chain of value addition cannot be over-emphasized. However, the work environment in the informal sector where these people work is characterized by poor environmental control as millers are prone to different kinds of hazard with little or no protection for their health (Asogwa, 1981). Agricultural mill operators engage in the milling of agricultural produce such as vegetables, tubers, spices, and food grains like corn and paddy rice, millet, and are predominantly located in market areas where they work under noisy and dusty conditions (Omokhodion and Kolude, 2005). Milling of agricultural produce is predominantly dominated by women particularly in the southern Nigeria but the reverse is the case in the northern Nigeria as milling of agricultural produce appears to be an exclusive trade for men. Milling of agricultural produce as an occupation is generally associated with various hazards ranging from exposure to many unhealthy conditions like high intensity noise, dust to the inhalation of exhaust smoke from the machines and respiratory irritants from the produce that are handled. In all cases, millers are exposed to dust from flour, grain, custard powder, instant coffee, sugar, dried milk, potato powder and soup powder are examples of highly combustible dusts (HSE, 2008). Operators and individuals who take milling of agricultural produce as an occupation are exposed to various work-related diseases that can be life threatening depending on their level of awareness about it health implication and the amount of safety and preventive measures employed. The most common accidents are caused by machinery and plant, with more than 500 accidents reported each year in which conveyors account for 30%, fork lift trucks for 12% and band saws for 5% of the accidents (Processing &

Packaging Machinery Association, 2007). Charmas (2000) observed that women's activities in manufacturing and food processing remain underestimated as most of their activities take place behind the scene within the agricultural value chain. Moreover, women's health at work is considered a very important issue by virtue of the role they play in the overall national development (Amali, 2006).Furthermore, there is lack of information on women in agriculture that explain the link between their work and their health (Ma and Chiong, 2009). In view of this concern, this study was therefore designed to determine the health hazards associated with milling of agricultural produce by women in Ilorin South Local Government Area of Kwara State, Nigeria. Specifically, the study assessed the socio-economic characteristics of the women agro-millers, the level of awareness about health hazards associated with milling of agricultural produce, the existing preventive measures used against health hazards associated with milling of agricultural produce and constraints faced by the respondents in using appropriate preventive and safety measures against health hazards associated with milling of agricultural produce in the study area.

2.0 MATERIALS AND METHODS

This study was conducted in Ilorin South Local Government Area of Kwara state. Ilorin South Local Government Area is one of the sixteen Local Council Areas in Kwara State. It was created in 1996 and has its headquarters in a town called Fufu; It has an area of 174 kilometers square and a population of 208,691 at the 2006 national census (NPC, 2006).

The Local Government Area has its vegetation in between guinea savannah and rain forest making the area favourable for the cultivation of crops like maize, cassava, millet, sorghum, rice; and tree crops like cashew, shea butter and locust bean trees are found in abundance. The inhabitants are majorly of Yoruba extractions who are vastly small scale farmers, while the majority living in bigger towns are mostly engaged in formal sector jobs like civil service, banking, carpentry, welding, bricklaying and trading. Milling of agricultural produce is a common occupation among the women in this Local Government Area.

The population of this study comprised of all women who take milling of agricultural produce as occupation in Ilorin South Local Government Area of Kwara State. 2-stage sampling technique was used to select the sample for the study. The first stage involved purposive selection of 5 major food markets (Gaa-Akanbi market, Fate-Tanke market, Tipper Garage market, Obo road market and Awolowo road markets) in the Local Government Area based on large concentration of agricultural produce milling operators in the markets. The second stage involved the use of membership register of women agro-millers in the selected markets which was obtained from the market leaders to randomly select 24 respondents from each of the selected market giving a sample size of 120.

2.1 Statistical Analysis

Data analysis was carried out using descriptive (frequencies and percentages) and inferential (chi-square) statistics.

3.0 RESULTS AND DISCUSSION

Table 1 shows that 30.8% of the respondents were between the age of 20-35 years, 29.2% were between 45-55 years, 26.7% were between 35-45 years and only 13.3% were between the age of 55-65 years. This implies that majority of the respondents were in their active age. Also, 76.7% of the respondents were married, 11.7% were widowed, 8.3 were single and 3.3% were divorced. Marriage could confer additional responsibility on individuals and may prompt the respondents to spend more time milling agricultural products so as to meet the family needs. Majority of the respondents (69.2%) practice Islam while 30.8% of them were Christians. The table also reveals that 45.0% of the respondents had only primary education, 36.7% had no formal education, 16.7% had secondary school education and only 1.7% had tertiary education. This shows that the literacy level among the respondents in the area was very low and could have a negative implication on adoption of innovation. The table further shows that 39.2% of respondents also engaged in medium scale trading.

24.2% were also food stuff dealers, 13.3% were petty traders and only 6.7% were in street sweeping (cleaner) as a secondary occupation while the remaining 16.6% have milling of agricultural produce as their only occupation. Table 1 also shows that 45.8% of the respondents have average monthly income between #5000 - #15000, 31.7% of them between #15000 and #25000, 17.5% of them between #25000 and #350000 while 5% of them have average monthly income between #35000 and #45000. This clearly shows that majority of the respondent are low income earners. Also, 60% of the respondents have household size between 1and 6 while 40% had between 5 and 10. And lastly the table also shows that 37.5% of respondents had 5 – 10 years of

experience, 28.3% of them had 1-5 years of experience, 7.5% of them had 15-20 years of experience while 4.2% had >20 years of experience in the milling of agricultural produce.

Table 1: Socio-economic characteristics of the respondents

Characteristics	Frequency	Percentage
Age		
20-35	37	30.8
35-45	32	26.7
45-55	35	29.2
>55	16	13.3
Marital status		
Single	10	8.3
Married	92	76.7
Divorced	14	11.7
Widowed	4	3.3
Religion		
Islam	83	69.2
Christianity	37	30.8
Educational attainment		
Formal education	44	36.7
Primary education	54	45.0
Secondary education	20	16.7
Tertiary education	2	1.7
Average monthly income		
#5000-#15000	56	45.8
#15000-#25000	38	31.7
#25000-#35000	21	17.5
>#35000	6	5
Household size		
1-5	72	60
5-10	48	40
Years of experience		
1-5	34	28.3
5-10	45	37.5
10-15	27	22.5
15-20	9	7.5
>20	5	4.2

Table 2 shows that 27.5% of the respondents were operators of wet mills, 41.7% operated of dry mills while 30.8% of the respondents indicated that they operate both wet and dry milling. This clearly depicts that majority of the respondents specialize in dry milling and may probably be exposed to more hazards occasioned by flour dust

Table 2: Distribution of respondents based on type of milling

Type of milling	Frequency	Percentage%
Wet	33	27.5
Dry	50	41.7
Both	57	30.8

Table 3 shows the ranking of the various preventive and safety measures used by the women agricultural millers in the study area. The table shows that sanitation; nose guard and apron were ranked 1st, 2nd, and 3rd in terms of preventive and safety measures among the respondents while use of hand gloves, boot, overall coat, ear plugs and goggle were ranked 4th, 5th, 6th, 7th, and 8th respectively by them. However, the poor ranking of the use of goggle and ear plugs could predispose the women millers to eye and ear infections through direct infiltration of dusts and particles.

Table 3: Distribution of respondent based on the use of preventive and safety aids

Preventive and safety measures	Always	Often	Seldom	Occasionally	Never	Mean	Rank
Hand gloves	4(3.3)	1(0.8)	1(0.8)	65(54.2)	49(40.8)	1.72	4th
Boots	-------	-------	1(0.8)	6(5.0)	113(94.2)	1.06	5th
Overall coat				4(3.3)	116(96.7)	1.04	6th
Nose guard	4(3.3)	16(13.3)	24(20.0)	44(36.7)	32(26.7)	2.3	2nd
Ear plugs				6(5.0)	114(95.0)	1.05	7th
Goggle	1(0.8)	------	------	3(2.5)	116(96.5)	1.01	8th
Apron	3(2.5)	21(17.5)	8(6.7)	7(5.8)	81(67.5)	1.81	3rd
Sanitation	51(42.5)	60(50.0)	4(3.3)	291.7)	3(2.5)	3.95	1st

NB: Values in parenthesis were in percentages (%)

Table 4 shows the severity of the constraints faced by the respondents in using appropriate safety and preventive measures during milling of agricultural products. The respondents ranked poor application skill (1st) as the most severe constraint, poor access to information of preventive and safety measures ranked 2nd while negative bandwagon effect towards the use of preventive and safety measures ranked 3rd. Furthermore, negative body reaction to use of safety and preventive measure, high cost of safety and preventive measures as well as non availability of safety and preventive measures ranked 4th, 5th, 6th and 7th respectively among the women agricultural millers. This implies that skill acquisition and appropriate information on safety and preventive measures have probably not been provided to the respondents in order to protect them against possible occupational hazards. This situation may result in accident and create some forms of difficulty in the adoption process (Davies *et al.*, 2008).

Table 4: Severity of constraints faced in using appropriate preventive and safety measures

Severity of constraints	Very severe	Severe	Not severe	Mean	Rank
Availability of preventive and safety aids	15(12.5)	47(39.2)	58(48.3)	1.39	7th
Cost of safety and preventive safety aids	8(6.7)	67(55.8)	45(37.5)	1.69	5th
Poor access to information	105(87.5)	10(8.3)	5(4.2)	2.83	2nd
Poor application skills	105(8.75)	12(10.0)	3(2.5)	2.85	1st
Quality of preventive and safety aids	5(4.2)	57(47.2)	58(48.3)	1.56	6th
Negative body reaction	23(19.2)	58(48.3)	39(32.5)	1.87	4th
Negative bandwagon effect	96(80.0)	23(19.2)	1(0.8)	2.33	3rd

NB: Values in parenthesis were in percentages (%)

Table 5 shows the most frequently encountered health problems among the respondents in the study area. About 1/3rd (33.4%) of the respondents reported rhinitis as the most frequently encountered health problem, 16.6% of them indicated conjunctivitis, 15.0% indicated tinnitus, 13.4% reported physical injury during milling, while the rest 11.6%, 3.4% and 1.6% reported high blood pressure, tracheitis and asthma respectively as the most encountered health problems.

Table 5: Most frequently encountered health problem among respondents

Health issues	Frequency	Percentage (%)
Tinnitus	18	15
Asthma	2	1.6
Tracheitis	4	3.4
Rhinitis	40	33.4
Conjunctivitis	20	16.6
Injury due to accident at work	16	13.4
High blood pressure	14	11.6

Table 6 shows that significant relationship exist between the chi-square analysis in which there is significant relationship between the respondents' age (X^2=1.001), educational attainment (X^2 =3.402) and income (X^2=2.940) and the severity of the constraints faced in using safety and preventive measures among the respondents. However, there was no significant ($p>0.05$) relationship between the constraints against the severity of the constraints faced in using safety and preventive measures and the respondents' working experience and household size. The implication of this result is that respondents' age, educational level and

income may influence the extent to which they use safety and preventive measures given the appropriate environment.

Table 6: Hypothesis testing

Variable	X^2	Df	P-Value	Decision
Age	1.001	1	0.97	S
Education	3.402	3	0.94	S
Income	2.940	2	0.09	S
Experience	0.734	2	0.69	NS
Household size	0.900	5	0.63	NS

There is no significant relationship between some selected socio-economic characteristics and constraints faced in using appropriate preventive and safety measures.

4.0 CONCLUSION AND RECOMMENDATIONS

Findings from the study showed that women agricultural millers do not possess the appropriate information and skills which could enhance effective utilization of safety and preventive measures while milling agricultural products. The respondents at one time or the other experienced health challenges (such as Rhinitis, wheezing, Headache, cough, back pain and joint pain) due to the dusty environment they were exposed to while working. Age, educational attainment and income of the respondents had relationship with the severity of the constraints faced in using safety and preventive measures among the respondents in the study area. The study therefore recommends that the Women in Agriculture (WIA) unit of the Kwara State Agricultural Development Programme (ADP) should be mobilized by the State Government to build the capacity of women agro-millers in order to prevent incidence of associated health challenges in the study area and the State at large.

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