PRODUCTION SKILLS REQUIRED BY SECONDARY SCHOOL GRADUATES FOR SUCCESS IN POPCORN FARMING ENTERPRISE IN AKURE AGRICULTURAL ZONE OF ONDO STATE

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Abstract

This study focused on the identification of production skills required by secondary school graduates for success in popcorn farming enterprise in Akure Agriculture Zone of Ondo State. Three research questions guided the study. The study adopted survey research design. The study was carried out in Akure Agricultural zone of Ondo State. The population of the study was 92 made up of 64 teachers of Agricultural science and 28 Agricultural Extension agents. Due to the small size of the population there was no sampling. The instrument used for data collection was a 47-item structured questionnaire which was face validated by three experts, Cronbach Alpha reliability method was employed to determine the internal consistency of the instrument and a coefficient of 0.78 was obtained. Ninety two copies of the instrument were administered on the respondents and all were retrieved. Mean and standard deviations were used to answer the research questions. It was found that all the 47 production skills identified for popcorn production were required by secondary school graduates in Akure Agricultural zone of Ondo state for success in popcorn farming enterprise. It was therefore recommended that the production skills required by secondary school graduates for success in popcorn farming enterprise be packaged and integrated into the curriculum of the skill acquisition centers for the training of the individuals on popcorn production.

Key words: Production, Skills, Secondary School, Graduates and Enterprise. **Introduction**

Popcorn (zea mays everta) is a type of maize plant belonging to the family poaceae (Graminae). It is an annual crop which belongs to the class of monocotyledon. Carter, Hicks, Doll, Schulte and Holmes (2017) reported that it is a special corn selected by the Indians in early western civilization. Mackenzie (2015) asserted that popcorn has been known for thousand years as discovered by archeologists in. Teotihuacan a valley in Puebla in Mexico.

Popcorn found in Mexico dates back to around 3600 B.C. The author further said that the native Americans showed the settler how to make popcorn. Popcorn became popular during the great depression because it was inexpensive. It was

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commercially grown in United State of America and the country is the world hiesght producer of popcorn. It is grown in lowa, Illinois, Indiana, Kentucky and Nebraska being the highest producer.(Mackenzie 2015)

Popcorn is around 3m in height, though some natural strains can grow taller. The stem has internodes from which leaves grow. The leaves are green, long, and narrow with parallel veins. It has male and female flowers referred to as inflorescence. The female flower is tightly enveloped by several layers of ears called husks. At the apex of the stem is the male flower. The cob is produced at the nodes. The grains attached to the cob are of the size of stem is the male flower. The cob is produced at the nodes. The grains attached to the cob are of the size of peas and they can be smooth and round or elongated.

Cindy (2000) classified popcorn varieties into cutie pops (multicolored), Mini blue (Dark blue grains), Mini Pink (pink purple gains), Robust (Yellow grains), Rubby red (Dark red grains) Shaman's blue (Purplish blue grains), Strawberry (Dark red grains), Tom tumb (yellow grains), and Top pop (yellow grains) Apart from the varieties, popcorn is classified into two types which are the pop kernel shape (Butterfly and Mushroom type) and the un-popped kernel shape (Pearl and Rice type).

Popcorn does not like high temperature, drought and pests. (Phumelele, 2017) Popcorn is one of the Americas favorite snacks food. Carter al (2017), mentioned that it is the best all round snacks food having 67%protein. The authors explained that 1-5ounce of serving popcorn supplies the same energy as two eggs. The hull is also excellent roughage comparing favorably with brain flaks or whole wheat toast and it is the staple food for Native Americans. Phumelele (2017) explained further that in popping, the kernel is heated, during heating, the moisture in the kernel turned into steam and softens the starch causing it to expand and press against the inside of the shell. When the pressure is great (up to 170% -180%), the kernel explodes and literally turns inside out. In Nigeria the production of popcorn is at lower level and mainly produced by small farm holders through their subsistence farming, though some commercial farms abound. Popcorn is grown mainly in areas where other types of maize are ground like Ondo, Oyo, Osun, Ogun, Kwara, Kogi, Plateau, Benue, Niger, Ebony, Imo, Anambra, Abia, among others. There are secondary school graduates that are unemployed who could be ready to take up popcorn farming if trained. Secondary school graduates as defined by the Federal Government of Nigeria (2004) in the National policy on Education (NPE) are the young persons who have successfully completed six years of secondary education. Elizabeth (2008) explained that secondary school graduates are those who have passed through the two levels of secondary education and completed the required six year programme.

One of the objectives of agriculture science at the secondary school level as outlined in the national policy on education (FRN. 2004) is to enable the student acquire basic knowledge and skills in agriculture and prepare the students for occupation in agriculture. Majority of secondary school graduate in the area of study are unemployed, moving from one street to another, idling away time engaging in

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societal crimes and youth restiveness. They go into hooliganism, drug addiction, stealing, robbery and kidnapping. Ejiofor and Ugwuoke (2010) asserted that most of the secondary schools in our nation lay much emphasis on theoretical aspect of agriculture thereby depriving the students the practical knowledge of agriculture that is needed for skill acquisition. Due to lack of relevant skills, secondary school graduates could not be employed into any job, while at the same time find it difficult to secure admission into tertiary institutions.

Skill according to Osinem (2008), is the ability to do something well. It refers to the ability to perform and an act expertly. The author further said it is a proficiency displayed in the performance of a task. Agusiobo in Onu (2010) defined skill as psychomotor, manipulative or technical task required for performance in any given occupation and training which could be acquired through observation, training and learning. Skill in the context of this study is the ability, knowledge and technical skills needed by secondary school graduates for profitable production of popcorn. Production is the creation of utility to satisfy man‘s needs. In the opinion of Jhingan in Ukonze (2010), production involves the use of factors of production such as land, labour, and entrepreneur to produce output needed to satisfy consumers. Production skills as explained by Enterprise and Economic Development glossary (2012), are group of proficies, facilities or dexterities identified for their application to work that results in the creation of goods and services. These proficiencies or dexterities are necessary for popcorn farming enterprise.

An enterprise in the view of Amoyedo (2007) is an organization with partially overlapping objectives working together for some period of time in order to attain the objectives. The author further explained that the actors utilize technology, competency, information and other resources in order to transform input to products that can satisfy the need of the customers. In his own contribution, Osuala (2004) explained that an enterprise includes self employed people, partnership and associations which engage in economic activity irrespective of its legal forms. Enome (2003) explained an enterprise as any farm activity (or identifiable sector of the farm business) for which there are specific returns. In this study, popcorn is farming is an enterprise involving many activities like pre-planting, planting, post-planting, harvesting and marketing in which the secondary school graduates could be trained so they can acquire the skills needed to be gainfully employed and to be successful in popcorn production.

Purpose of the Study

The purpose of this study therefore is to identity production skills required by secondary school graduates for success in popcorn farming enterprise. Specifically the study sought to identify production skills required by secondary school graduates in

(1) Pre-planting and planting operations in popcorn Enterprise
(2) Post –planting and harvesting operations in popcorn enterprise
(3) Marking operations in popcorn enterprise

Research Questions

The following research questions guided the study

What are the production skills required by secondary school graduates in?

(1) Pre-planting and planting operations in popcorn Enterprise
(2) Post-planting and Harvesting operations in popcorn Enterprise
(3) Marketing Operations in popcorn Enterprise

Method

Survey research design was adopted for the study. Survey research design in the opinion of Olaitan, Ali, Eyoh and Sowande (2000) is a plan, structure and strategy that an investigator adopts in order to obtain solution to research problem using questionnaire in collecting, analyzing and interpreting the data. The study made use of questionnaire to collect data from the respondents. The study was conducted in Akure Agricultural Zone of Ondo State. The population of the study was 92 which comprised of 64 teachers of agriculture science and 28 agricultural extension agents in Akure agriculture zone (Akure South and Akure North Local Governments). It is the believe of the researcher that the teacher of agriculture science and agricultural extension agents are qualified to respond to the questionnaire items due to the experience they have gained in the various tertiary institutions they attended and the practical experience in their working place. The population was small and therefore no sample was involved

The instrument used for data collection was a- 47 developed by the researchers. Each questionnaire item was assigned a four point response scale of highly required (AR), slightly required (SR) and Not required (NR) with a corresponding value of 4, 3, 2 and 1 respectively.

The instrument was subjected to face validation by three experts. One from the Department of Crop production and two from the Department of Science Education (Agricultural Education Unit) Federal University of Kashere, Gombe state. The reliability of the instrument was established using Cronbach alpha reliability method to determine the internal consistency of the questionnaire items and a coefficient of 0.78 was obtained. The instrument was administered to the respondents by the researcher and two research assistants hired to cover each of the two areas that made up the zone. Ninety two (92) copies of the questionnaire were administered and retrieved.

The data collected were analyzed using weighted mean and standard deviation to answer the research questions. The arithmetic mean of 2.50 obtained was the cut-off point for decision making. Any skill item with the mean value of 2.50 or above was regarded as a skill for success in popcorn production required while those with the mean value below 2.50 were regarded as not required. Any item with a standard deviation of between 0.00 and 1.96 indicated that the respondents were not far from the mean as well as the opinion of one another while any item whose standard deviation is greater than 1.96 mean that the respondents were far from the mean and one another in their responses or opinions.

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Result

The findings of the study were obtained based on the results of data analysis.

Research Question1

What are the production skills required by secondary school graduates in pre-planting and planting operations popcorn enterprise?

The data relating to this research question is presented in Table

1 **Table 1**

Mean ratings and standard deviation of the responses of teachers of agricultural science and agricultural extension agents on the production skills required by secondary school graduates in pre-planting and plantings operation in popcorn enterprise:

S/N	Pre-Planting And Planting SKILLS		SD	Remarks
1.	Acquire a land which is rich but well drained loamy or sandy loamy soil.	3.32	0.95	RQ
2.	Survey the area of the land.	3.60	0.65	RQ
3.	Test the suitability of the land for popcorn Production	3.40	0.87	RQ
4.	Test for the PH range of the soil (around 6.0)	3.56	0.87	RQ
5.	Clear the bush of all existing vegetation	3.52	0.65	RQ
6.	Pack dry weeds on farm land and burn where necessary	3.52	0.65	RQ
7.	Uproot stumps of trees and pack before tillage	3.60	0.76	RQ
8.	Till the land using hoe or plough	3.56	0.77	RQ
9.	Harrow the land after 3-4 weeks	3.64	0.64	RQ
10.	Select appropriate variety of popcorn to be planted	3.60	0.76	RQ
11.	Identify disease resistant variety of popcorn for planting	3.48	0.71	RQ
12.	Obtained planting material (popcorn) from recognized agricultural station or farm shop	3.64	0.76	RQ
13.	Carry out seed germination test	3.44	0.77	RQ
14.	Treat the grains/kernels to be planted	3.68	0.56	RQ
15.	Measure out 25kg of popcorn per hectare	3.64	0.76	RQ
16.	Plant at a spacing of 75cm between rows and 25cm within rows	3.44	0.77	RQ
17.	Plant at a soil depth of 5-8cm	3.40	0.87	RQ
18.	Planting 2-3 seeds/grains perhole	3.48	0.71	RQ
19.	Check for germination after 5 days	3.60	0.76	RQ
			N =92	

Key = x = Mean, SD = Standard Deviation, RQ= Required

Data presented in table 1 revealed that all the nineteen (19) production skill items for pre-planting and planting of popcorn had their means ranged from 3.40 to 3.32 and were all above the cut – off point of 2.50. this indicated that all the nineteen

production skill teems for pre-planting and planting of popcorn were required by secondary school graduates for popcorn farming enterprise in Akure Agricultural Zone. The standard deviation ranged from 0.56 to 0.95 indicating that the respondents are not very from the mean and from one another in their opinion.

Research Question 2

What are the production skills required by secondary school graduates in post planting and harvesting operations in popcorn production?

The data relating to this research question is presented in Table

2 **Table 2**

Mean ratings and standard deviation of the responses of teachers of agricultural science and agricultural extension agents on the production skills required by secondary school graduates in post planting and harvesting operations in popcorn production

S/N	Post Planting and Harvesting skills		SD	Remarks
1	Supply ungerminated seeds 10 days	3.21	0.69	RQ
2	Thin to 2 seedlings per stand	3.86	0.34	RQ
3	Weed three times before maturity or use herbicide for weed control (Atrazine or 2-4D)	3.01	0.96	RQ
4	Maintain the recommended soil moisture for optimum production	3.77	0.40	RQ
5	Apply N.P.K. Fertilizer 12:12:12 two to three times before maturity (a) when it is knee high or about 8-10 leaves (b) when it forms silk and (c) when leaves tum yellow after silk formation	3.49	0.72	RQ
6	Control pest and disease in the farm	3.50	0.80	RQ
7	Scare away the birds by using scarecrow	3.33	0.86	RQ
8	Apply foliar application of fertilizer where necessary	3.54	0.445	RQ
9	Check for maturity between 80-120 days	3.41	0.45	RQ
10	Check for the yellowing of the leaves of the cob as a sign of maturity	3.20	0.53	RQ
11	Harvest when all the leaves of the cob turn yellow and dry	3.53	0.45	RQ

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Table 2 (Contd.)
Mean ratings and standard deviation of the responses of teachers of agricultural science and agricultural extension agents on the production skills required by secondary school graduates in post planting and harvesting operations in popcorn production

S/N	Post Planting and Harvesting skills		SD	Remarks
12	In rainy season harvest and take the cobs inside for drying	3.15	0.50	RQ
13	In dry season allow the cobs to dry properly on the field before harvesting	3.82	0.34	RQ
14	Store for 2-3 weeks for further drying	2.88	0.89	RQ
15	Dry the kerned to a moisture level between 13-14%	3.77	0.40	RQ
16	Shell the kernels from the cobs manually or through the use of a grain Sheller	3.01	0.96	RQ
17	Do a pop- test to see if the corn (grain) is ready	3.36	0.81	RQ
18	Cure the grains more by drying if not ready	2.70	0.96	RQ
19	Store in airtight coritainers	3.70	1.03	RQ
20	Store in pest free place	3.41	0.45	RQ

Key = as in Table 1

Data in Table 2 revealed that the twenty (20) production skill items for post-planting and harvesting of popcorn had their means ranged from 2.70 to 3.86 and were all above the cut- off point of 2.50. this indicated that all the twenty (20) production skill items for post-planting and harvesting of popcorn were required by secondary school graduates for popcorn farming enterprise in Akure agriculture zone. The standard deviation ranged from 0.34 to 1.03 indicating that the respondents were not very far from the mean and from one another in their opinion.

Research Questions 3
What are the production skills required by secondary school graduates in marketing operations in popcorn enterprise?
The data relating to this research question is presented in Table 3

Table 3
Mean ratings and standard deviation of the responses of teachers of agricultural science and agricultural extension agents on the production skills required by secondary school graduates in marketing operations in popcorn production.

	Pre-Planting and Planting Skills		SD	REMARKS
1	Bag the dry grains/kernel ready for sale	3.35	0.63	RQ
2	Conduct market survey for popcorn	2.88	0.84	RQ
3	Advertise sale of popcorn to attracts customers	3.30	0.66	RQ
4	Fix appropriate prices for the sale of popcorn	3.25	0.67	RQ
5	Transport popcorn for sale to market or bulk purchase buyers	3.32	0.66	RQ
6	Sell to customers	3.24	0.65	RQ
7	Keep record of sales	3.27	0.64	RQ
8	Calculate the expenditure and income to determine profit	3.33	0.60	RQ

Key = as in Table 1

Data in Table 3 showed that all the eight (8) production skills item for marketing of popcorn had their means ranged from 2.88 to 3.35 and were all above the cut-off of points of 2.50 this indicated that all the eight (8) production skill items for marketing of popcorn were required by secondary school graduates for popcorn farming enterprise iin Akure agricultural zone. The standard deviation ranged from 0.60 to 0.84 indicating that the respondents were not very far from the mean and from one another in their opinion.

Discussion of Results

The findings of research question one revealed that nineteen (19) production skill items in preplanting and planting were rated as required by secondary school graduates for success in popcorn farming enterprise in Ondo state. The result is in agreement with the findings of Ejiofor and Ugwuoke (2010) who observed that acquiring a land that is rich and well drained, testing for soil PH clearing the bush of the existing vegetation, packing, drying and building of the thrash, ploughing and harrowing the land among others are the production skills required for success in farming enterprise.

Finding in respect of research question showed that production skill items in post-planting and harvesting were rated as required by secondary school graduates for popcorn farming enterprise. The finding of this study is in consonance with the findings of Oketoobo, Lawal and Onipede (2011) who found out that graduates of

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schools of agriculture required production skills both in post planting and planting operations such as supplying ungerminated seeds, thinning, weeding, fertilizer application, pest control, checking for maturity and drying among others are required for commercial cucumber production in south west Nigeria.

Regarding research question three the findings indicated that the items in marketing skills were rated as required by secondary school graduates for success in popcorn farming enterprise. This conforms with the findings of Nebechukwu (2007) who noted that the marketing skills such as conducting market survey, advertising, fixing of appropriate prices and transportation are important for success in any farming enterprise.

Conclusions

In the light of the findings of this study, it was concluded that:

(1) Teachers of agricultural science and Agricultural extensions agents agreed that all the production skills in pre-planting, planting, post planting and harvesting operations were required by secondary school graduates for success in popcorn farming enterprise in Ondo State.

(2) For marketing operations, the respondents (Teachers of agricultural science and Agricultural extension agents rated as required all the eight skill items for success popcorn farming enterprise.

Recommendations

Based on the findings and conclusion of this study, the researcher recommended that

(1) The Ministry of Education in Ondo State should incorporate the production skills identified in popcorn production by this study into the curriculum of skill acquisition centers where they could be used to train the unemployed secondary school graduates.

(2) School Administrations in Ondo State Secondary Schools should monitor and supervise the teachers of Agricultural science so that they will lay more emphasis on the practical aspect of agriculture by using the school farm to train the students in order to acquire the production skills needed for self employment and success in farming enterprise.

(3) Ministry of Agriculture through the Extension agents should use the identified production skills to train the unemployed tertiary institutions graduates. This will make them entrepreneurs instead of job seekers

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