



## Technical Know-How Required by the Students of Colleges of Education in Grasscutter (*Thryonomys Swinderianus*) Production for Wealth Creation in Benue State, Nigeria

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### Abstract

The study identified technical know-how required by the students of Colleges of Education, in Grasscutter also known as cane rat (*Thryonomys swinderianus*) production for wealth creation in College of Education Oju and Katsina-Ala Local Government Area of Benue state, Nigeria. The study was guided by three objectives, three research questions and two null hypotheses tested at 0.05 level of significance. The survey research has a population of 168 that is made up of 127 registered agricultural extension agents and 41 agricultural education lecturers from the two Colleges of Education in Benue State. There was no sampling because the population was manageable. The instrument was a structured questionnaire for data collection titled: Technical Know-how in Grasscutter Production for Wealth Creation Questionnaire (TGPWCQ) developed by the researcher. It was subjected to face and content validity by five experts and was trial tested on 35 respondents comprising of 22 agricultural extension agents and 13 wildlife lecturers in Kogi State. Cronbach Alpha method of reliability was used to determine the internal consistency of the TGPWCQ, with a reliability coefficient of 0.979. Mean and standard deviation were used to answer the research questions. The study found that technical Know-how in planning, in housing and health management practices as well as feeding and marketing of the processed meat and its products. There was no significant difference between the mean responses of Extension agents and lecturers on planning, feeding and marketing. But there was a significant difference between the mean ratings of the responses of Extension agents and lecturers on housing, health and management practices. It was recommended amongst many, that the identified technical Know-how be developed into modules to enhance skill acquisition.

**Keywords:** Technical know-how, College of Education graduates, Grasscutter, Production

### Introduction

Grasscutter farming in Nigeria is on the rise and it's a good way of providing income for a lot of young people. Grasscutter is adaptable to most tropical vegetation. They are found in mangroves, swamps, rainforests and savannas. Grasscutters love to dwell in farmlands, sugarcane plantations, oil palm plantations and in creeks. Grasscutter is classified as monogastric (one-stomach) herbivore. Grasscutter is also known as cutting grass or cane rat. In Yoruba language, they are called Oya. While in Alago they are known as Anye, while in Gafia (Gouza or Guahia) and Nchi in Hausa and Igbo languages respectively. The grasscutter (*Thryonomys swinderianus*) is one of the popular game species in West Africa including Nigeria. Grasscutter has two species which include: *Thryonomys swinderianus* and *Thryonomys gregorianus*.

The giant grasscutter has a thick body, measuring 40 to 60 cm in addition to a 20 to 25 cm tail. Its average weight fluctuates between 2 to 4 kg in females and 3 to 6 kg in males. It is a monogastric herbivore, easy to feed and a good transformer of fibre into protein. Addae-Korankye, Kyere, Asamoah-Bonsu

and Poku (2016) reported that its vegetarian diet is digested by microbial action in the caecum. It produces two litters of between 2 to 6 youngsters per year (Adjanohoun, 1992).

Technical know-how according to Ugwuoke and Ifeanyieze (2012) is the ability to do something well, measured against a standard, especially the ability acquired through experience or training. According to Obiweluzo, Onwurah, Oraelosi, Uzodinma, and Dike (2021), technical know-how is very essential knowledge and skill obtainable in a profession and which the professionals in the field must possess and be able to demonstrate at an optimal level of acquisition and functioning.

According to Ugwuoke, Onu, Agboeze and Asogwa (2013), experimental and demonstration methods which are essential in skill development are not frequently used in an educational system which is be devilled by poor teaching and learning facilities like that of Nigeria. This is in line with Rasak, Ake, Oye and Ganiyu (2018) who noted that the adverse effect of poor facilities and equipment for teaching had a negative

effect on the quality of products of educational institutions, especially Colleges of Education.

However, according to Age (2015), a farmer gets to know about innovation, gathers information about the innovation that has just been introduced and makes a mental application of the new practice to his own situation. Agricultural Education according to Obiora, Ojogbane, Chukwurah and Eze (2021) is a process of imparting knowledge, skills and attitudes in agriculture to learners at any educational level including Colleges of Education. Students of Colleges of Education in the view of Ugwuoke and Ifeanyieze (2012) are those learners who engage in a three-year education programme that was designed to equip students with the skills, values, attitudes and related knowledge in production, processing and marketing of agricultural and related products. Ekele, Essien and Aguma (2020) noted that the programme equipped the students with technical know-how in instruction and technical areas of agriculture to enable them to impart the same to learners in schools upon graduation.

According to Obiweluzo, Onwurah, Oraelosi, Uzodinma and Dike (2021) extension workers are the important link between research organisations and farmers. Giant Grasscutter farming provides a lot of income to the farmers. National Research Council (NRC) (1991) noted that Grasscutter farming is profitable because of its social acceptability, meat quality, inexpensive food sources and amenability to captive rearing, good litter size and short generation interval. The meat of grasscutters fetches higher prices than the meats of domestic animals. Ogbonna (2018) reported that grasscutter is a good source of animal protein of high biological value, and as well, grasscutter at the local market can amount to two thousand five hundred naira to ten thousand (₦ 2,500 - ₦ 10,000) depending on the size and season. Owen, (2012) reported that grasscutter farming is a venture which offers profitable opportunities for enhancing livelihood and wealth generation in rural and urban areas of the country. Dabogogo, (2013) reported that well-managed grasscutter farms can substantially contribute to local economies and produce enough profit for grasscutter farmers including agricultural graduates.

However, this was supported by Osinem and Nwoji (2010) who noted that there were growing concerns among agricultural industrialists that graduates of higher education lacked adequate competencies or technical know-how needed for employment in agricultural industries.

### Statement of the Problem

Most of Agricultural Education graduates nowadays have no job as a result of looking for a white-collar job in rural areas, which is not readily available for average Nigerian youths. That alone makes them remain unemployed for a very long time even when equipped with the required skills. Therefore, there is a need for these young students to engage in Giant Grasscutter (*Thryonomys swinderianus*) production for wealth creation, in order to be self-employed and also earn a living with little starting capital upon graduation.

### Objectives of the Study

The main purpose of the study was to identify the technical know-how in grasscutter production for the training of graduates of Colleges of Education, for wealth creation upon graduation.

Specifically, the study sought to identify:

1. technical Know-how required by College of Education students in Planning for grasscutter production Enterprise
2. technical know-how required by College of Education students in Housing and Health Management Practices of grasscutters
3. technical know-how required by College of Education students in Feeding and Marketing the processed grasscutter meat and its products

### Research Questions

The following research questions were raised to guide the study:

1. What are the technical know-how required by College of Education students in the planning of grasscutter production enterprise?
2. What are the technical know-how required by College of Education students in the housing and health management practices of grasscutter?
3. What are the technical know-how required by the College of Education students in feeding and marketing of the processed grasscutter meat and its products?

### Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

**H<sub>01</sub>:** There is no significant difference between the Mean responses of Agricultural Education lecturers and Agricultural Extension agents on planning for grasscutter production enterprise.

**H<sub>02</sub>:** There is a significant difference between the Mean responses of Agricultural Education lecturers and Agricultural Extension agents on housing and health management practices of grasscutter production enterprise.

### Methodology

The research is a qualitative survey design which has a population of 168 that is made up of 127 registered agricultural extension agents and 41 agricultural education lecturers from the two Colleges of Education in Benue State. There was no sampling because the population was manageable. The instrument used for data collection was a structured questionnaire titled: Technical Know-how in Grasscutter Production for Wealth Creation Questionnaire (TGPWCQ), developed by the

researcher. Cronbach Alpha method of reliability was used to determine the internal consistency of the TGPWCQ, with a reliability coefficient of 0.979. The questionnaire items are anchored on a four-point rating scale of Highly Required (HR), Averagely Required (AR), Slightly Required (SR) and Not Required (NR) with a corresponding nominal value of 4,3,2 and 1 respectively. The benchmark for decision making was 2.50. The instrument was subjected to face and content validity by five experts. Data collected was analyzed using mean and standard deviation to answer research questions while t-test statistics was used to test the null hypotheses at 0.05 level of significance. Any item with mean value of 2.50 and above is accepted as required technical Know-how for Grasscutter production, while any item below 2.50 were rejected.

### Results

**Table 1: Technical Know-how Required by the Colleges of Education Students in Planning of Grasscutter Production Enterprise.**

S/N	Items on Planning	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	Remarks
1	Objectives for running Grasscutter production	3.34	.53	3.20	.82	3.27	.45	Required
2	Identify sources of funds	3.43	.63	3.14	.76	3.29	.69	Required
3	Identify sources of grasscutter e.g. from the wild	3.34	.73	3.15	.76	3.25	.75	Required
4	Sources of inputs such as feed	3.48	.59	3.29	.75	3.38	.67	Required
5	Decide on the system of production Such as family and for commercial purposes	3.46	.59	3.20	.71	3.33	.65	Required
6	Decide a suitable place for location of the farm where necessary	3.41	.63	3.32	.67	3.36	.65	Required
7	Decide the number to start with	3.39	.66	3.39	.68	3.39	.67	Required
8	Purchase/buy Thryonomys swinderianus from a well trusted source	3.24	.73	3.42	.68	3.32	.70	Required
9	Draw out an activity schedule to cover Grasscutter production stages	3.48	.68	3.31	.67	3.39	.61	Required
11	Decide on the extent of market coverage	3.31	.68	3.18	.75	3.24	.71	Required

*N = number of respondents,  $\bar{X}_1$ =mean of Colleges of Education Lecturers,  $SD_1$  =Standard Deviation = Standard Deviation of Colleges of Education Lecturers,  $\bar{X}_2$  = mean of agricultural extension agents,  $SD_2$  = standard deviation of agricultural extension agents,  $\bar{X}_g$  = grand mean of respondents,  $SD_g$  = grand standard deviation of respondents.*

Table 1 shows that all the eleven (11) items in planning had their grand mean values ranging from 3.24 to 3.39, indicating that their mean values were above the cut-off point of 2.50. This implies that all the 11

items were required in the Grasscutter production enterprise. The Table also showed that the grand standard deviation of the items ranging from .45 to .75. that means that, the opinion and the experiences of the respondents is not too far from each other.

**Table 2: Technical Know-how Required by the Colleges of Education Students in Housing and Health Management Practices (HMP) of Grasscutter Production Enterprise.**

S/N	Item Statement in Housing & HMP	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	Remarks
1	Identify suitable housing design	3.56	.54	3.30	.63	3.43	.58	Required
2	Materials for construction of cages	3.46	.55	3.26	.62	3.36	.58	Required
3	How to construct Grasscutter housing e.g. using mud, wire mesh and wood	3.58	.54	3.33	.67	3.45	.60	Required
4	Measurement of Grasscutter house	3.39	.62	3.39	.73	3.39	.67	Required
5	Location/Grasscutter house and fencing	3.34	.61	3.21	.73	3.27	.66	Required
6	Construct cages of 30 m x 30 m x 28 cm	3.41	.66	3.26	.67	3.33	.66	Required
7	Provide round hutch for the female/male Grasscutter	3.34	.65	3.24	.66	3.29	.65	Required
8	Identify relevant records to keep for Grasscutter production enterprise	3.29	.67	3.30	.72	3.29	.69	Required
9	Protect the Grasscutter from predators	3.26	.59	3.33	.73	3.29	.66	Required

$N$  = number of respondents,  $\bar{X}_1$ =mean of Colleges of Education Lecturers,  $SD_1$  = Standard Deviation = Standard Deviation of Colleges of Education Lecturers,  $\bar{X}_2$  = mean of agricultural extension agents,  $SD_2$  = standard deviation of agricultural extension agents,  $\bar{X}_g$  = grand mean of respondents,  $SD_g$  = grand standard deviation of respondents.

Table 2 shows that all the 9 items in housing and health management practices had their grand mean values ranged from 3.27 to 3.45, indicating that their mean values were above the cut-off point of 2.50. The grand standard deviation of the items ranging from .58 to .69, it means that all the required items are accepted and needed in the management practices by the students Colleges of Education for grasscutter enterprise.

**Table 3: Technical Know-how Required by the Colleges of Education Students in Feeding and Marketing of the Processed Grasscutter Meat and it Products**

S/N	Item Statements on Feeding & Marketing	$\bar{X}_1$	$SD_1$	$SD_2$	$\bar{X}_2$	$\bar{X}_g$	$SD_g$	Remarks
1	Identify local feed stuff used for feeding Grasscutter. Such as, Pennisetum purpureum and Panicum maximum, Stem and leaves	3.53	.55	3.34	.64	3.43	.59	Required
2	Collect and wash green plant feeds before feeding them, twice in a day morning/evening	3.26	.63	3.52	.56	3.39	.59	Required
3	Concentrates feeds or supplements powder snail shell or calcined bones, Table salt etc	3.48	.59	3.40	.64	3.44	.61	Required
4	Provide adequate feed. There. No Shortage	3.29	.55	3.41	.62	3.35	.58	Required
5	Provide feeding trough in the hutch feeds	3.56	.50	3.36	.65	3.46	.57	Required
6	Provide drinking trough or bowl in the hutch	3.41	.49	3.33	.64	3.37	.56	Required
7	Provide enough clean drinking water in a bowl	3.53	.50	3.21	.68	3.37	.59	Required

$N$  = number of respondents,  $\bar{X}_1$  = mean of Colleges of Education Lecturers,  $SD_1$  = Standard Deviation = Standard Deviation of Colleges of Education Lecturers,  $\bar{X}_2$  = mean of agricultural extension agents,  $SD_2$  = standard deviation of agricultural extension agents,  $\bar{X}_g$  = grand mean of respondents,  $SD_g$  = grand standard deviation of respondents.

Table 3 shows that all the seven (7) items in feeding and marketing of the processed grasscutter meat had their grand mean values ranging from 3.35 to 3.46, indicating that their mean values were above the cut-off

point of 2.50. The grand standard deviation of the items ranged from 0.56 to 0.61 shows that the required technical Know-how is highly required and acceptable.

**Table 4: t-test of Responses of Agricultural Education Lecturers and Agricultural Extension Agents on Technical Know-how Required by Colleges of Education Students in planning of Grasscutter Production Enterprise.**

Status	N	Mean	Std. Deviation	Df	t-cal	Sig.	Remarks
Colleges of Education Lecturers	41	3.3415	.52961	166	0.88	0.380	NS
Agricultural Extension Agents	127	3.2047	.81978				

$N$  = Number of respondents,  $Std$  = Standard Deviation,  $df$  = degree of freedom,  $t$ -cal =  $t$ -calculated,  $Sig.$  =  $P$ -value;  $P > 0.05$ ,  $NS$  = Not significant.

Table 4 shows a p-value of 0.380 which is greater than alpha value of 0.05. This indicates that there is no significant difference between the responses of agricultural education lecturers and agricultural

extension agents on Technical Know-how Required by Colleges of Education Students in the planning of Grasscutter Production Enterprise.

**Table 5: t-test of Responses of Agricultural Education Lecturers and Agricultural Extension Agents on Housing and Health Management Practices of Grasscutter Production Enterprise.**

Status	N	Mean	Std. Deviation	df	t-cal	Sig.	Remarks
College of Education Lecturers	41	3.5610	.54994	166	2.292	0.023	S
Agricultural Extension Agents	127	3.3071	.81978				

$N$  = Number of respondents,  $Std$  = Standard Deviation,  $df$  = degree of freedom,  $t$ -cal =  $t$ -calculated,  $Sig.$  =  $P$ -value;  $P > 0.05$ ,  $S$  = Significant.

Table 5 shows a p-value of 0.023 which is less than the alpha value of 0.05. This indicates that there is hypothesis of significant difference between the responses of agricultural education lecturers and agricultural extension agents on housing and health management practices of grasscutter production

enterprise. It means that the two groups of respondents, have different perception or views over the technical abilities of each other on the item statements. In order to close the gap between the two groups of respondents, their perception must be in line with the situation.

## Discussion of Findings

The findings showed that all the 11 items in planning had their grand mean values ranging from 3.24 to 3.39, indicating that their mean values were above the cut-off point of 2.50. Also, the grand standard deviation of the items ranged from 0.45 to 0.75. There was no statistical significant difference between the mean ratings of responses for the two groups of respondents. Therefore, the hypothesis of no significant

difference for the two groups of respondents in the planning of grasscutter enterprise was not rejected. This further shows that the experiences of the respondents are the same since there was no disparity in their opinion on technical know-how required by Colleges of Education graduates in planning of grasscutter enterprise.



The findings of hypotheses two showed that all the nine (9) items in housing and health management practices had their grand mean values ranging from 3.27 to 3.45, indicating that their mean values were above the cut-off point of 2.50, and the grand standard deviation of the items ranging from 0.58 to 0.69, this indicates that there was a statistical significant difference between the mean ratings of responses of the two groups of respondents. Therefore, the hypothesis of significant difference for the two groups of respondents was rejected. This further shows that the experiences of the respondents are not the same since there was disparity in their opinion on technical know-how required by the students of Colleges of Education in Planning for the production of Grasscutter (*Thryonomys swinderianus*) for wealth creation in College of Education Oju and Katsina-Ala in Benue State. The findings are in collaboration with Ogba and Ndem (2016) who identified occupational skills required by secondary school graduates for breeding of Giant African Land Snails (GALS) to include; identify the type of pen environments (cage, house, tank), Skills of successful placing base layer of coarse gravel of about 20mm. depth on the floor of the house, Skill of putting humus soil on top of the floor, Skill of keeping the soil moist not wet for GALS and so on.

## Conclusion

The study identified Technical know-how required by students of colleges of Education in Grasscutter (*Thryonomys swinderianus*) production for wealth creation in Oju and Katsina-Ala L.G.A of Benue State, Nigeria for wealth creation upon graduation. Specifically, the study sought to identify the technical know-how required in planning, housing and health management practices of grasscutter, feeding and marketing of the processed grasscutter meat and its products. Three research questions were raised and two null hypotheses were formulated to guide the study.

Grasscutter production is an area of agriculture that has been neglected by many people even though very economical and easy to raise. Agricultural Education lecturers and Agricultural Extension agents in the College of Education Oju and College of Education Katsina-Ala all in Benue State do not differ in their opinions on the technical know-how required by the students of Colleges of Education in Grasscutter (*Thryonomys swinderianus*) production for wealth creation in Benue State, Nigeria for wealth creation upon graduation, and the technical know-how were in the areas of; planning for Grasscutter production,

housing and health management practices of Grasscutter, feeding and marketing of Grasscutter meat and its products. It is believed that, if students acquired this knowledge during their programme in the above-mentioned areas, creation of wealth through the production of Grasscutter will never be a thing of concern in their lives to live by it.

## Recommendations

1. More extension agents should be recruited and facilitated for more coverage and effectiveness.
2. A periodic training, Seminars and Workshops on community Participation should be organized by the government and other Stakeholders to motivate and arouse the interest of young farmers and graduates in the formation of cooperative groups/associations. This would facilitate the formation of more cooperative associations and access to credit facilities with minimum effort as a means for agricultural development in the study area.

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