UNLOCKING YOUTHS MANAGEMENT COMPETENCE IN REARING OF RABBITS FOR SELF-RELIANCE IN NSUKKA SENATORIAL ZONE OF ENUGU STATE, NIGERIA

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Abstract

Unemployment among the able youths has been recognized among social menace in Nigeria with Enugu State inclusive and rabbit production has been identified as a viable weapon to address this problem. This study, therefore, identified management competence required by youths in rabbits rearing for self -reliance in Nsukka Senatorial Zone of Enugu State. Three research questions and three hypotheses were formulated to guide the study. The population for the study was 297. The sample size for the study was 103 selected through purposive sampling procedure. A 30-item questionnaire titled: 'Youth Management Competence for Rabbit Rearing Questionnaire' (YMCRRQ) was used for data collection. The instrument was face validated by three experts. Cronbach Alpha Method was used to determine the internal consistency of the questionnaire items which yielded a coefficient of 0.79. Mean was used to analyze the data and t-test statistics was used to test the null hypotheses at 0.05 level of significance. It was found out that the youths required all the management competencies in feeding, management and housing of rabbits. It was recommended that all the managerial competencies be used to train youths as a package for sustainable self –reliance in Nsukka Senatorial Zone of Enugu State.

Keywords: Youths, management, competency, rabbit-rearing, self-reliance.

Introduction

Rabbits (*Oryctolagus cunniculus*) are small non- ruminants reared purposeful for the meat (Aduku & Olukosi, 2016), sometime they are raised for both meat and skin. They are medium sized, hopping mammals with long legs, ears and short tails (Are, Igbokwe, Asadu, & Bawa, 2013). Rabbits are mammals of order-*Lagomorpha*, family-*Leporidae*, sub- family- *Leporinae*, which comprises mammals that are hindgut fermenters and practitioners of caecotrophy, that is they eat their soft fasces (Miśta, Króliczewska, Marounek, Pecka, Zawadzki, & Nicpoń, 2015).

The domestic rabbit descended from wild rabbits found in the Mediterranean countries and was introduced into England in the late eleventh to early twelfth century. The different breeds of modern domestic rabbits have evolved as far back as the

eighteenth century. Rabbits were distributed to various parts of the world by early sailing vessels whose masters wished to have readily available scare meat at various points on their voyage. This must be the most likely means of early introduction of rabbits to Nigeria. The New Zealand White, Flemish Giant, California, Chinchilla and Dutch Rabbits are common breeds of rabbits that have introduced to Nigeria (Aduku & Olukosi, 2016).

Rabbits have been considered as mini-livestock farm animal of economic importance. In the view of Ajala and Balogun (2004), rabbit production as a micro-livestock has attracted attention among youths and farmers in Nigeria. This is due to the fact rabbit meat is nutritious, palatable and a convenient source of high-quality protein. The skins or pelts can be dressed, dyed and made into fur garments. Milk from rabbit is very nutritious. Rabbit manure is rich in nitrogen and phosphorus and can be used to improve the fertility of the soil. Rabbits are also used in research and experimental purposes. It is found in most schools for educational purposes (Are, *etal.*, 2013). Rabbits are commercial resource that provides employment and income to farmers in rural areas and even in urban areas. Rabbit production supplies meat for consumption and skins for industries. Rabbit meat is considered a high value gourmet product.

Rabbits can be of great social and economic value to both the family and the community at large. They provide meat, a source of fertility, and other products, and can be quickly sold for cash or turned into a nutritious meal when needed (Lukefahr, Paschal, & Ford, 2013). Meat from domesticated rabbit is an all-white meat product that is high in protein and low in fat, sodium and cholesterol as compared to other common meats, such as beef, lamb, pork and poultry. Rabbit meat has been recommended by some physicians to their patients with coronary heart conditions. This is because they have been found to be nutritiously low in fat and fine grained and suitable alternative to poultry meat (Adedeji, Adejumo, & Obaniyi, 2013). Also, rabbitary requires comparatively low level of capital set - up; requires a little space and is well-adapted to domestic rearing (Akinola, 2009).

However, it has been reported by Food and Agriculture Organization, FAO (2004), Adeniyi, Shobanke and Omotoso (2013), and Adejo, Muhammed and Aliu (2016) that the average animal protein intake in Nigeria is low, calling for concerted effort towards alleviating the shortage of protein. Average consumption of animal protein in Nigeria is estimated at 4.5g/head/day as against a minimum requirement of 35g/head/day recommended by FAO of the United Nations (Atsu, 2002). As reported also by Ekele (2013), the increasing demand for animal protein needs attention which should be given to non-conventional sources such as the easily managed rabbits as against the conventional sources such as cattle, sheep, goat, pig and poultry that would require more capital, space and time. Yusuf, Garba, Olafadeham and Okafor (2009) observe that there is need to bridge the gap between protein requirement and actual protein consumed by the people, hence, micro-livestock production is a socio-economic activity that could lead to improved income and raise the quality of living of Nigerians. Hence, the need for unlocking youth competence in rearing rabbit cannot be over emphasized. Competency in

the opinion of Ekele (2019) refers to knowledge, abilities and capacity acquired through deliberate, systematic and sustained efforts to adaptively carry out complex activities or task. Consequently, Onu and Ugwuoke (2009) posit that one who lacks competence may not be useful to the society. This further implies that youth's managerial competence needs unlocking for rabbit rearing venture.

Penn State Extension (2005) explained that rabbitry should be an enclosed place. Rabbits tolerate building that has proper ventilation, lighting, heating and cooling system. Heating and ventilation are crucial because rabbits do not tolerate temperature extreme. All metal cages help prevent unsanitary conditions that can lead to health problems. Mature bucks and does should have individual cages that are at least 30 inches wide, 30 inches deep, and 20 inches high attached with watery system. Rabbits need to live as natural a life as possible, with plenty of space with a companion rabbits to play with, and toys to keep them stimulated for proper feeding. McNitt, Lukefahr and Cheeke (2013) affirmed that the main bulk of a rabbit's diet is good quality hay. They need this fibre to wear down their continually growing teeth and keep their digestive tract running smoothly. Hay is always freely available to rabbits which make up about 50% of their diet. Fresh green vegetable provides vitamins and minerals. Fruits and carrots are high in sugar but can be fed occasionally (such as slice of banana or apple). Rabbits require fresh, clean water, a pregnant doe and buck need more of pellets. The best management system has porous pits under the cages with layers of sand, gravel and drainage tile. One bulk service about 10 does but no more than two to three times a week. The average gestation period lasts 31 to 32 days. The average commercial litter consists of 8 to 10 kits and the young are weaned in about 30 days.

The researchers observed that most youths in Nsukka Senatorial Zone do not possess the requisite competencies required for rabbit rearing especially feeding, management and housing of rabbits. Perhaps that explains the lack of interest by youths in rabbit rearing. The researchers also noted that in spite of high demand of rabbit meat for consumption, the supply had been on the decline. High level of unemployment is also prevalent among the youths in Nsukka Senatorial Zone resulting to dependence of these youths on their parents and relatives for sustenance and a few of these youths involve themselves in social vices such as political thuggery, restiveness, stealing, exhorting money from members of their communities and strangers visiting their communities, among others. Thus, for self- reliance of the youth, there is need for acquisition of managerial competencies in rabbit production. Specifically, the study seeks to unlock competencies in feeding, management and housing of rabbits.

Research Questions

1. What are the competencies that required unlocking by youths in feeding rabbits?
2. What are the competencies that required unlocking in rabbit management by youths?
3. What are the competencies that required unlocking in housing by youths?

Hypotheses

1. There is no significant difference in the mean ratings of the responses of rabbit farmers and extension agents in unlocking competencies required by youths for feeding of rabbits.
2. There is no significant difference in the mean rating of the responses of extension agents and rabbit farmers in unlocking competencies required by youths for rabbit management.
3. There is no significant difference in the mean ratings of the responses of rabbit farmers and extension agents in unlocking competencies required by youths for housing in rabbits.

Methodology

Survey research was adopted for this study. In this design, same information is gathered from an unbiased representative group of population being investigated. This design was considered suitable because the opinions of a representative of respondents were assessed using questionnaire. The study was conducted in Nsukka senatorial Zone of Enugu State. Three research questions and three hypotheses were raised for this study. The population of the study was 297 consisting of 281 rabbit farmers and 16 extension agents (ENADA; Enugu State Agricultural Development Authority, 2018). A sample size of 103 was obtained through purposive sampling procedure. It consisted of 87 rabbit farmers and all the 16 extension agents were involved. A 30 item structured questionnaire known as *Youth management competence for rabbit rearing questionnaire (YMCRRQ)* was the instrument used for data collection with a four point rating scale of highly required (HR), averagely required (AR), slightly required (SR), and not required (NR) with corresponding values of 4, 3 , 2 , and 1 respectively. The instrument had three sections with each section having 10 items on the three specific objectives. Any item with a mean value of 2.50 was considered required and items that scored below 2.50 were considered not required. Three experts validated the instrument, two from the Department of Animal Production and one from the Department of Agricultural Education, University of Agriculture, Makurdi, Nigeria. The Cronbach Alpha method of reliability was used to determine the internal consistency and a reliability coefficient of 0.79 was obtained. 103 questionnaires were administered to the respondents and all the 103 were retrieved for analysis. Mean and standard deviation were used to answer the research questions while t-test was used to test the hypotheses at 0.05 level of significance.

Results

Research Question 1: What are the competencies that required unlocking by youths in feeding rabbits?

Hypothesis 1: There is no significant difference in the mean ratings of the responses of rabbit farmers and extension agents in unlocking competencies required by youths for feeding of rabbits.

Table 1: ***Mean, Standard Deviation and t-test Analysis of Farmers and Extension Agents on Competencies Required by Youth for Feeding of Rabbits (N=103)***

S/N	Competency Items	$\bar{X}$	SD	Cal.t	RMK
1	Ability to mix rabbit ration correctly.	3.50	0.81	.68	NS, R
2	Provide rabbits with roots, green materials and concentrates.	2.50	0.79	.41	NS, R
3	Add carbohydrates and fats to rabbits' feeds.	3.15	0.80	.80	NS, R
4	Check for the development of sharp edges on feeding equipment which may cause injury.	2.80	0.76	.51	NS, R
5	Clean roughage rack, cage and disinfect them once a week.	3.15	0.82	.63	NS, R
6	Disinfect water and feeding trough at least once a week.	2.95	0.78	.92	NS, R
7	Clean feed and water trough daily.	3.00	0.80	.89	NS, R
8	Provide and make the protein level of rabbit feed high.	2.75	0.77	.91	NS, R
9	Manage the practice of caecotrophy by rabbits. (eating their soft faeces).	3.25	0.81	1.03	NS, R
10	Detect the right age for caecotrophy.	2.85	0.62	.85	NS, R

Keys: $\bar{X}$**=** Mean, SD= Standard Deviation, t-cal=t- calculated, t-table=1.96, NS= Not significant, R= required.

The data in Table 1 revealed that the mean of the 10 items ranged from 2.50 to 3.50. This showed that all the items had a mean value above the cut- off point of 2.50 which indicated that all the competencies (skills) were rated required by youths for unlocking these competencies for rearing of rabbits. The Table also revealed that all the items had their standard deviation ranged from 0.76 to 0.82 which shows that the respondents were not far from the mean in their responses. The result of the test of hypothesis in Table 1 indicated that each of the items had t-calculated value lower than t-tabulated value of 1.96. This revealed that there was no significant difference in the mean ratings of farmers and extension agents in unlocking competencies required by youths in rabbit rearing. Therefore, the hypothesis of no significant difference was upheld for the 10 items.

Research Question 2: What are the competencies that required unlocking in rabbit management by youths?

Hypothesis 2: There is no significant difference in the mean rating of the responses of extension agents and rabbit farmers in unlocking competencies required by youths for rabbit management

Table 2: ***Mean, Standard Deviation and t-test Analysis of Farmers and Extension Agents on Competencies Required by Youth for Management of Rabbits (N=103)***

S/N	Competency Items	$\bar{X}$	SD	t-cal	RMK
1	Identify good breeding stock for profit making.	3.00	0.69	.99	NS, R
2	Capacity to detect the number of does that can be handled by one buck.	2.75	0.66	.89	NS, R
3	Ability to detect when the doe is ready to mate.	3.25	0.59	1.09	NS, R
4	Ability to detect when the doe is actually pregnant.	2.85	0.60	.97	NS, R
5	Capacity to take preventive measures of rabbit pest and diseases.	2.90	0.58	.95	NS, R
6	Ability to detect when rabbits are suffering from diseases or pest attack.	2.75	0.56	.88	NS, R
7	Provide the Doe with plenty of soft hay for preparing her nest box before kindling.	3.22	0.79	1.01	NS, R
8	Remove any dead kid after the Doe have been kindled.	2.61	0.70	.86	NS, R
9	Provide extra feeds to Does during nursing periods.	2.50	0.57	.95	NS, R
10	Ability to detect and wean rabbits at the right age	3.00	0.63	.97	NS, R

Keys: $\bar{X}$**=** Mean, SD= Standard Deviation, t-cal=t- calculated, t-table=1.96, NS= Not significant, R= required.

The data in Table 2 revealed that the mean of the 10 items ranged from 2.50 to 3.22. This showed that all the items had a mean value above the cut –off point of 2.50 which indicates that all the competencies were rated required by respondents. The Table further revealed that all the items had their standard deviation ranged from 0.86 to 1.01 indicating that the mean responses are not too far from each other. The result of the test of hypothesis in table 2 indicates that each item had t-calculated value lower than the t-tabulated value of 1.96. This revealed that there was no significant difference in the mean ratings of the responses of farmers and extension agents on competencies required by youths in management of rabbit.

Research Question 3: What are the competencies that required for unlocking in housing by youths?

Hypothesis 3: There is no significant difference in the mean ratings of the responses of rabbit farmers and extension agents in unlocking competencies required by youths for housing in rabbits.

Table 3: ***Mean, Standard Deviation and t-test Analysis of Farmers and Extension Agents on Competencies Required by Youth for Housing of Rabbits (N=103)***

S/N	Competency Items	$\bar{X}$	SD	t-cal	RMK
1	Ability to construct a hutch that will protect rabbits from rain, wind, sun and predators.	3.50	0.57	.91	NS, R
2	Capacity to differentiate between intensive, semi-intensive and extensive system of rabbit rearing.	2.85	0.61	1.09	NS, R
3	Ability to design rabbit hutch correctly to specification.	2.50	0.52	.93	NS, R
4	Ability to site rabbit hutch appropriately.	2.60	0.76	.87	NS, R
5	Provide and use correct materials to construct rabbit house.	2.75	0.55	.99	NS, R
6	Ability to construct indoor hutches.	3.25	0.50	.89	NS, R
7	Provide and construct outdoor hutches for rabbit.	3.00	0.49	1.05	NS, R
8	Make provision for the safety of the house against predators.	3.15	0.53	.97	NS, R
9	Capacity to clean the house on a regular basis.	2.95	0.62	.93	NS, R
10	Ability to renovate and reconstruct the hutches regularly.	3.00	0.47	.88	NS, R

Keys: $\bar{X}$**=** Mean, SD= Standard Deviation, t-cal=t- calculated, t-table=1.96, NS= Not significant, R= required.

The data in Table 3 revealed that the mean of the 10 items ranged from 2.50 to 3.15. This showed that all the items had a mean value above the cut- off point of 2.50, an indication that all the competencies were rated required by respondents. The Table further revealed that the standard deviation ranged from 0.47 to 1.05 which shows that there was little variation in their mean responses. Hypothesis tested revealed that all the items had their t-calculated value lower than the t-tabulated value of 1.96. This confirmed that there was no significant difference in the mean ratings of rabbit farmers and extension agents on competencies required in housing of rabbits.

Discussion of Results

Findings from Table 1 show that all the 10 items on feeding of rabbits were rated required by respondents. The findings might be due to the fact that respondents have been sourcing for cheaper means of feeding rabbits which would require less feed inputs with better performance. The findings were in congruence with the study of Okeme and Ifeanyienze (2014) that 25 entrepreneurial skills were required by teachers of agriculture in Kogi State in housing and feeding of rabbits. The required entrepreneurial skills in feeding of rabbit according to them include: provide feeding and drinking troughs in the cage, plant green vegetables in the garden for the feeding of rabbits, use a sound feeding programme, collect and wash green plant feeds before feeding them, give young rabbits the best quality feed(cabbage, lettuce, *stylo*) , provide clean drinking water in a bowl , use automatic nipple-type, locate nipple near the middle of the cage and 8’ above the

floor , provide salt such as supplement, feed a doe/ buck with pelleted rabbit grain, feed a doe at 4-6 times each day until kindling, feed 12-16 times for 3-5 days after kindling and then give full feed until bunnies are weaned , give fortified pellets feed with additional vitamins during a heavy breeding schedule, mix rabbit dropping with feed and feed them. The findings in Table 1 also were in consonance with the work of Brecchia (2005) who found out that several convergent pieces of evidence which demonstrate that maternal nutritional status may exert a great positive influence on the reproductive functions of Does. The author further found out that provision of good feeding for does enhances early embryogenesis, pregnancy and birth. The finding from Table 1 was also in agreement with the submission of Ekele (2013) who reported that feeding of fish requires addition of protein and carbohydrates in their diet.

The findings from Table 2 show that all the 10 items on management of rabbits were rated required by respondents. This might be because the respondents have not obtained maximum yield or profit than their usual way of managing rabbits. The finding is similar to that of Eze, Mama, and Onu (2013) that teachers of agriculture in Gambia required 11 competencies in housing for rabbit production. The findings is similar to that of Isiwu and Ifeanyienze (2016) that health management improvement skills required in grass cutter production include: observe grass cutters for disease symptoms, cull sick ones to a separate pen, consult veterinarian for medical attention, purchase drugs to treat the sick animals, observe grass cutters for response to treatment, bury dead diseased grass cutters and apply wood ash round the grass cutter pen to prevent tailor ants. The findings were also in line with the submission of Owen, Amakiri, Chukwuigwe and Aniebo (2008) that assert that rabbits achieve optimum performance in terms of reproductive output with good management procedures.

The findings from Table 3 that all the 10 items on housing of rabbits were rated required by respondents. This may be due to the loss or death the respondents have experienced in the past due to the nature of their traditional ways of housing rabbits. The finding is similar to that of Eze, Mama, and Onu (2013), Okeme, *etal* (2014) that teachers of Agriculture required 11 entrepreneurial skills in housing of rabbits which include: provide constructed cages of about 30'' x 30'' x 28'', provide round hutch for buck, introduce bucks with letters A, B, C, D, E, or tattoo each one, protect the rabbit from predators, cull the one that bullies the young at 2nd kindling, select replaceable stock from mothers that produce the largest, fattest growing litters, identify the ones that are good for breeding purposes, assign latter to any replaced doe or buck, keep replacement at the rate of one young doe/ buck each month for every 12 working doe/ buck. The findings were also in agreement with the work of Owen, Alawa, Ngodigha and Amakiri (2008) who asserted that rabbit housing should be built under a tree or such natural shelter to take advantage of breeze. According to them, Bamboo flooring is recommended for the adult rabbits only, as young rabbits tend to slip on the smooth slates and can develop deformed legs. Splitting and weaving bamboo strips into a mat provides much better footing for all rabbits.

The study found out that all there was no significant difference in mean ratings of the responses of extension agents and rabbit farmers on all competencies required in unlocking feeding, management and housing of rabbits. This implies that the professional expertise and experience of rabbit farmers and extension agents did not significantly influence their responses on the required competencies for unlocking rabbit production in Nsukka Zone of Enugu State.

Conclusion

It has been established from this study that the thirty competencies in rearing of rabbit are required by youths in order to unlock their hidden potentials as rated by respondents. These competencies are feeding, management and housing for rabbits. As micro -livestock, rabbits rearing can prove to be a good investment destination for youths particularly the unemployed graduates in Nsukka Zone. This study therefore could be a stepping stone in the right direction in rabbit rearing for immense profitability.

Recommendations

Based on the findings, the following recommendations were made:

1. That all the identified managerial competencies be used by extension agents and vocational training centres to train youths as a package for sustainable self – reliance in Nsukka Senatorial Zone of Enugu State.
2. Training of youths should be vigorously pursued in the area of feeding of rabbits on a weekly basis to ensure mastery of competencies on part of the youth.
3. Extension agents should be motivated by ministry of agriculture in order to train youths in the area of management of rabbits.
4. Experienced rabbit farmers should accept more youths as trainee apprentice in the area of housing for rabbit rearing.

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