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Skills Needed in Rabbit Production by Retired University Lecturers for Sustainable Income Generation in Ebonyi State, Nigeria

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Abstract

The study evolved skills needed by retired university lecturers in rabbit production for income in Ebonyi State, Nigeria. Specifically, it determined skills needed by university lecturers in housing, feeding and disease control in rabbit production. Three research questions and three null hypotheses guided the study. The population of the study was 78 rabbit farmers and Animal science lecturers. Survey research method was adopted in this study. Questionnaire was used for data collection. Data were analyzed using mean, standard deviation and t-test were used to test the hypotheses at 0.05 level significance. Results show that 13 rabbit housing skills need by the retired university lecturers. These include, among others, understand environmental conditions of areas/sites for housing ($\overline{X}$ = 3.46), install noisy alarms such as bell, chimes and gongs for security ($\overline{X}$ = 3.42), select conducive site ($\overline{X}$ = 3.63). Other findings are 13 skills on feeding of rabbits. These include, supply water to the rabbit ($\overline{X}$ = 3.77), feed rabbits at the right time ($\overline{X}$ = 3.65), was and clean of feeder and drinker ($\overline{X}$ = 3.60). Further findings are 10 diseases control skills, including administer drugs ($\overline{X}$ = 3.45), spray insecticide without affecting the birds identify the causative agent of diseases, (pathogens: fungi, bacteria, nematode, protozoa and environmental factors) ($\overline{X}$ = 3.44), carry out routine cleaning exercise ($\overline{X}$ = 3.41). Based on the findings, three recommendations were made.

Keywords: Skills, Rabbits, Retired, University, Lecturers, Production, Income.

Introduction

Rabbit is a common domestic animal that belongs to the family of leporidae and the species of oryctolagus curriculums, which have the following features, long ears, long hind, soft fur and a cottony tail. Iwena (2017) observed that rabbits are monogastric herbivores with a large caecum which functions as a site for microbial fermentation process, and specifically, to separate nutrient categories in order to retain the most readily fermented nutrient in the caecum. The male rabbit is called buck and female called doe while the young ones are litters or bunnies. The buck attains a mature live weight ranging between 4.5 to 5kg in eight to nine months when it is ready to be used for breeding. Eze (2015) noted that, rabbits are highly prolific animals with about 7-15 kittens per kindling. They can kindle for more than 7 times in a year. The young ones are born blind. Rabbit have a gestation period of 30-31 days. Akinokun (2000) reported that its high reproductive potentials is as a result of their short gestation period, early sexual maturity and their ability to rebreed shortly after parturition. They grow fast and reach maturity weight in five to six month. They are efficient converter of wide range of vegetable matter into meat because they have the ability of turning forages into high quality protein (Fielding, 2003). Rabbits are easy to handle and manage and also have high rate of disease resistance but susceptible to stress (Iwena, 2017).

Available report indicates that, rabbit make good quality meat, more delicious and nutritious than beef Aduku and Olukosi (2002). The meat of rabbit is rich in protein, vitamin and minerals. It contains less fat and has higher proportions of essential poly unsaturated lenoleic fatty acids. A cooked piece of rabbit meat is reported to be high in protein (56%), low in fat (9%), low in cholesterol, sodium and calories (8%) and contain 128% phosphorus, 13% of iron, 16% of zinc, 14% riboflavin, 6% thiamin, 35% B12 and 48% niacin.

There are other important aspects of rabbit. Rabbit skin also has some commercial values. They may be dressed, dyed and made into fur garment and slippers. Most domestic rabbits are raised for meat production while some are for laboratory and biological purpose (Loosh, 1997). Rabbit droppings are high in nitrogen and phosphorus and useful in improving soil fertility. Rabbit productions thus have enormous potential in alleviating the problem of animal protein supply in developing countries (Ezea, 2004). Fielding (2016) also reported that the skin and fur can be used for making jackets, head-gear, carpet or rugs and other decorative household ornamentals.

Eze (2015) noted that rabbit meat is a source of white meat. White meat (rabbit meat) has a lower level of cholesterol which can protect a person from heart disease. It is also reported that rabbit meat (white meat) can protect a person from alzheimer disease. Omega-3 fatty acid is present in rabbit meat and is a major solution to depression. Rabbit production could serve as a source of sustainable income to farmers, unemployed retired civil servants including university lecturers.

Retired university lecturers are persons who have retired from active service in their teaching profession. Retirement is the act of retiring or the state of being retired, that is to withdraw oneself from business, public life or and to remove one from active service. A close observation of many retired teachers in Ebonyi state and the problems they are facing draw the attention of all and sundry. These problems seem to range from sudden loss of life, loss of the usual monthly salary, anxiety about a residential home, physical disabilities and aging. Retirement is an age long practice in both private and public services (Bolaji, 2015), he stressed that it is a major stage in adult development and it essentially marks the split from middle years to old age. He further noted that at 65 years of age, mental and physical exuberance dwindle; it however becomes rationale to relieve the person of some strenuous and excruciating duties that may weigh him down and consequently threaten his health. This therefore, results to the retirement age of 65 in developed and economically buoyant countries. But in Nigeria due to economic crunch and high rate of unemployment, the minimum legal age for mandatory retirement was put at 55 until recently when the federal government of Nigeria pegged it to 60 years. (Ndem & Elom 2016). These groups of people need skills in order to be-engaged to earn income for their maintenance.

Skill is special ability to perform in a particular field, especially acquired by learning and practice. Turnbull (2010) stated that, skill is a well established habit of performing tasks in a manner acceptable by workers in a profession. Ben (2010) stated that, skills are the ability and capacity acquired through deliberate, systematic and continuous effort to learn. It is the manifestation of acquired knowledge; it is knowledge that an individual has which is translated into practical activity. In other works, skills can be described as knowledge that is put into practical used once it is translated into activity. Skills in this context is referred to as the ability and capacity to carry out any task involving complex activities such as; ability to carry out practical tasks and adapt to new technology. Skills in rabbit production involves ability to identify rabbit breeds, select best breeds, determine the stocking rate, provide equipment needed for rearing of rabbit, select the right type of topography, constructing the hutch, formulate and balance feed, identify sick rabbit, select and administer medication. It also involves housing, feeding and diseases control of rabbit. (Ndem & Elom 2016)

They also stressed that skills in rabbit production involve complex activities such as; ability to carry out practical tasks and adapt to new technology, identify rabbit breeds, select best breeds, determine the stocking rate. Other skills are provide equipment needed for rearing of rabbit, select the right type of topography, constructing the hutch, formulating and balance feed, identifying sick rabbit, select and administering medication. These rabbits production skills can be used to equip retirees, including retired university lectures for

income generation. Retirement is a serious challenges in Nigeria..

A close observation of many retired university teachers in Ebonyi State indicates that many are facing a lot of difficulties such as loss of the usual income, payment of residential rent, deteriorated health condition, physical disabilities and aging. Many retired university lecturers experience nightmare as a result of delay or non-payment of gratuities and pensions. They also suffer loneliness and idleness. Sometimes the pension payment is not enough to cater for their needs including feeding, clothing, health and family maintenance. Many of the retired teachers have met their untimely death due to non-payment or efficient retirement benefit. They therefore need to acquire some post retirement skills that could help earn some income. Acquisition of rabbit production skill could help them, hence this study.

Purpose of the Study

The main purpose of this study was to evolve skills needed in rabbit production by retired university lectures in Ebonyi state of Nigeria. Specifically the study determined skills needed by retired university lecturers in:

1. housing rabbits
2. feeding of rabbits
3. disease control in rabbits

Hypotheses

The following hypotheses guided the study:

There is no significant difference in the mean rating of rabbit farmers and Animal science lecturers on skills needed by retired university lecturers in:

1. housing of rabbits
2. feeding of rabbits
3. disease control in rabbits

Methodology

***Design of the study*:** The study adopted survey research design.

***Area of the study*:** Ebonyi State of Nigeria was the area of the study. Ebonyi State is located in the South-eastern zone of Nigeria. There are many rabbit farmers in the state who are engaged in commercial rabbit production. The study was carried out in Ebonyi state because of the thriving nature of rabbits in the area.

***Population of the study*:** The population of the study was 78 respondents made up of 63 Animal science lecturers from universities in Ebonyi state and 15 registered rabbit farmers in the area of the study. The lecturers are experts in animal production and animal science, thus competent in providing the appropriate information on skills in rabbit production. The rabbit farmers are engaged in rearing of rabbits. They therefore possess the required skills, knowledge and experience in rabbit farming. The entire population was manageable and was involved in the study. There was no sampling.

***Instrument for data collection*:** The instrument for data collection was questionnaire. It was developed based on the purposes of the study. The instrument was structured based on 4-points rating scale of "Very highly needed (VHN)", "Highly needed (HN)", "Moderately needed (MN)", and "Not needed (NN)" with

respective values of 4,3,2,1. It was validated by three experts in Animal science. The reliability of the instrument was determined by carrying out a pilot test using 20 rabbit farmers and animal science lecturers in outside the area of the study. The data obtained were analyzed using Cronbach Alpha statistics. Overall reliability coefficient of 0.62 was obtained.

***Data collection method*:** A total of 78 copies of the questionnaire were administered by hand to the respondents. The trained research assistants were used. The entire 78 copies were retrieved. This represented 100 percent retrieval rate.

***Data Analysis Technique*:** The data were analyzed using mean with standard deviation to answer the research questions while the hypotheses were tested using t-test at a 0.5 level of significance. Mean of 2.50 was used as the cutoff point or bench mark for decision making. Hence, any item in the questionnaire with the mean score of 2.50 and above ($\overline{X} \geq 2.50$) was regarded as the production skills needed, while any item with the mean score below 2.50($\overline{X} \leq 2.50$) was regarded as "Not needed production skills". In testing the hypotheses, the t-calculated was compared with the critical t-table and if t-calculated value exceeds the critical or the t-table values, the null hypotheses (Ho) was rejected and the alternative hypothesis (Ha) uphold, but if the t-calculated value was less than the t-table value, the null-hypotheses was accepted at 0.05 level of significance.

RESULTS

Table 1: Mean Responses, Standard Deviation and t-test Results on Skills Needed by Retired University Lecturers in Housing Rabbits (N = 78)

S/N	Housing Skills	$\overline{X}_1$	SD_1	$\overline{X}_2$	SD_2	$\overline{X}_g$	t-cal	R
	Ability to:							
1	understand environmental conditions of areas/ sites for housing	3.52	0.69	3.40	0.82	3.46	0.62	NSD
2	select conducive site	3.73	0.54	3.52	0.69	3.63	1.24	NSD
3	select site which is flat and gentle slopping	3.12	0.73	3.49	0.71	3.31	1.29	NSD
4	mark and measure the dimension of the site	3.06	0.70	3.41	0.83	3.24	0.55	NSD
5	construct length of the hutch	3.06	0.79	3.19	0.80	3.13	0.49	NSD
6	construct width of the hutch	3.00	0.75	3.17	0.75	3.09	-0.14	NSD
7	construct the height of the hutch	3.66	0.61	2.96	0.82	3.31	-2.68	NSD
8	construct floor space with correct specification.	2.06	1.43	3.11	0.74	2.59	1.82	NSD
9	install noisy alarms such as bell, chimes and gongs for security	3.60	0.63	3.23	0.96	3.42	-2.20	NSD
10	construct foot dip in the rabbit tent	3.61	0.62	2.87	1.23	3.04	-1.05	NSD
11	construct rabbit tent (the house that houses the hutch)	3.21	0.79	3.36	0.80	3.29	1.00	NSD

12	construct rabbit nestling boxes	2.60	1.40	3.47	0.71	3.03	1.20	NSD
13	control temperature in the hutch	3.40	0.73	3.17	0.80	3.28	-0.99	NSD

Nl = Number of lecturers = (63), Nf = Number of farmers = (15), $\bar{X}_1$ *= Mean Responses of farmers,* $\bar{X}_2$ *= Mean Responses of lecturers,* SD_1 *= Standard Deviation of farmers,* SD_2 *= Standard Deviation of Lecturers,* X_g *= Grand mean of farmers and lecturers, t-cal = Calculated t-test, Df = Degree of Freedom (76), t-critical = 1.98, R = Remarks, NSD = Not Significant Difference.*

Table 1 reveals that 13 skills in housing of rabbits are needed by the retired university lecturers for rabbit production. This is because each of the skill has mean score of 2.5 and above(x> 2.50). The Table also indicates that there was no significant difference between the mean responses of the rabbit farmers and the animal sciences lecturers on the skills needed in housing of rabbits. Therefore, the null hypothesis was accepted.

Table 2: Mean Responses, Standard Deviation and t-test Results on Skills Needed by Retired University Lecturers in Feeding of Rabbits (N = 78)

S/N	Feeding Skills	$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2	$\bar{X}_g$	t-cal	R
	Ability to:							
1	locate available food stuff (fruit tubers vegetables, grasses even household refuse)	3.38	0.77	2.82	0.74	3.10	1.15	NSD
2	gather available food stuff material	3.19	0.88	3.51	0.70	3.35	0.69	NSD
3	prepare household refuse for feed	3.01	0.89	3.66	0.61	3.33	0.68	NSD
4	prepare concentrate	3.04	0.91	3.50	0.60	3.27	1.18	NSD
5	prepare supplement feed for feeding rabbits	3.36	0.64	2.54	0.51	2.95	0.94	NSD
6	prepare maintenance feeds for adult rabbits	3.42	0.52	2.70	0.54	3.06	1.04	NSD
7	select appropriate green folder (grasses) for feeding of rabbits	3.37	0.71	2.69	0.60	3.03	0.71	NSD
8	select appropriate legumes for feeding of rabbits	3.35	0.77	3.76	0.61	3.55	0.46	NSD
9	feed rabbit at the right time	3.54	0.59	3.76	0.62	3.65	1.55	NSD
10	feed rabbit with the right diet	3.67	0.59	3.51	0.60	3.59	0.32	NSD
11	supply water to the rabbit	3.67	0.55	3.88	0.59	3.77	1.09	NSD
12	wash and clean of feeder and drinker	3.67	0.56	3.54	0.82	3.60	0.98	NSD
13	identify the time for increase in water supply	3.45	0.71	2.86	0.47	3.15	1.60	NSD

Nl = Number of lecturers = (63), Nf = Number of farmers = (15), $\bar{X}_1$ *= Mean Responses of* farmers, $\bar{X}_2$ = Mean Responses of lecturers, SD_1 = Standard Deviation of farmers, SD_2 = Standard Deviation of Lecturers, X_g = Grand mean of farmers and lecturers, t-cal = Calculated t-test, Df = Degree of Freedom (76), t-critical = 1.98, R = Remarks, NSD = Not Significant Difference.

Table 2 reveals that 13 skills in feeding of rabbit are needed by retired university lecturers in rabbit production. This is because each of the

skill has mean score of 2.5 and above(x> 2.50). The score of the standard deviations indicates that the means are not far from the central mean. The Table also indicates that there was no significant difference in mean ratings of the rabbit farmers and the animal science lecturers on the feeding skills of rabbit. Therefore the null hypothesis was accepted.

Table 3: Mean Responses, Standard Deviation and t-test Results on the Skills Needed by the Retired University lecturers in Disease Control in Rabbits Production (N = 78).

S/N	Disease Control Skills	$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2	$\bar{X}_g$	t-cal	R
	Ability to:							
1	detect sick rabbit	3.39	0.70	3.33	1.04	3.36	0.28	NSD
2	identify disease symptoms of rabbit	3.19	0.93	3.20	0.67	3.19	-0.04	NSD
3	administer vaccine to rabbit	3.01	0.73	2.86	1.18	3.00	0.61	NSD
4	cull sick rabbit	3.14	0.97	3.26	0.59	3.12	-1.07	NSD
5	administer drugs	2.98	0.66	3.60	0.50	3.45	-1.63	NSD
6	carry out routine cleaning exercise	3.30	0.46	3.40	0.63	3.41	0.19	NSD
7	spray insecticide without affecting the birds	3.42	0.54	3.40	0.82	3.38	-0.20	NSD
8	identify causative agents of diseases (pathogens: fungi, etc)	3.36	0.66	3.43	0.91	3.44	0.29	NSD
9	use right disinfectant in the foot dip	3.28	0.79	3.62	0.61	3.45	-1.43	NSD
10	use personal safety measures while spraying insecticide such as hand gloves, nose mask	3.47	0.61	3.60	0.63	3.53	-1.92	NSD

Nl = Number of lecturers = (63), Nf = Number of farmers = (15), $\bar{X}_1$ = Mean Responses of farmers, $\bar{X}_2$ = Mean Responses of lecturers, SD_1 = Standard Deviation of farmers, SD_2 = Standard Deviation of Lecturers, X_g = Grand mean of farmers and lecturers, t-cal = Calculated t-test, Df = Degree of Freedom (76), t-critical = 1.98, R = Remarks, NSD = Not Significant Difference.

Table 3 indicates that the retired university lecturers need 10 skills in disease control in rabbit production. This is because the items had the mean scores ranging between 3.53 and 3.00 which are above 2.5. (x> 2.50). The scores of the standard deviation indicate that the opinions of the respondents did not vary far from the central mean. Also the table shows that there was no significant difference in the mean ratings of the rabbit farmers and the animal science lecturers on the skills needed in disease control in rabbit production.

Discussion of Findings

The result in Table 1 shows that 13 skills in housing were needed by retired university lecturers. This finding is in line with Bassey (2010) who reported that skills in housing of rabbit by farmers are necessary for effective production of rabbits. Gilson (2002) also reported that when constructing rabbit hutches metal materials should be used to help prevent sanitary condition that can lead to health problems. The findings also supported Eze (2015) who said

that well built hutch promotes rabbit production.

Additionally, Iwena (2012) stated that in construction of rabbit hutch, it is essential to provide nest made of soft materials where the young rabbits will feel comfortable. This finding also supports Aduku and Olukosi (2002) who reported that, the floor of the rabbit hutch should be made of concrete materials to prevent the rabbit from boring hole and escape.

Result in Table 2 shows that 13 skills in feeding of rabbit were needed by retired university lecturers for rabbit production. The result supports Aliyu (2002) who noted that feeding is one of the most essential management practices in rabbit production. Additionally the findings of this work is in agreement with Eze (2015) who reported that rabbits require good feeding for prolific production.

Finding of the study also support Ezea (2004) who remarked that legume plants should be incorporated in the feeds of rabbit for protein supply.

Result in Table 3 indicates that 10 skills in disease control of rabbit are needed by the lecturers. Such as skills in detecting sick rabbits, identify diseases symptoms of rabbit, administration of vaccines and drugs to rabbits and routine sanitation in the hutch among others. This finding is in line with Fielding (2003) who stated that disease control is one of the major management practices in rabbit production. She further explained that effective control of disease improves rabbit production. Bolaji (2005) also reported that improper disease control in rabbit may lead to high mortality rate. He added that a rabbit farmer must be skillful in identifying diseases in the hutch for immediate action. He further stressed that diseases control in rabbit production should be handled by an expert who has the competency in that field. Equally the finding agrees with Fielding (2003) who reported that early dictation of diseases in rabbit will make it easy for the farmer to control it. The opinion of fielding implies that a rabbit farmer must possess the competency in disease dictation at the early stage in order to make the control of diseases in the rabbit farm easy.

Furthermore Ndem & Elom (2016) reported that disease in rabbit farm if not controlled may lead to high mortality rate of the farm animal. They further explained that rabbits affected by disease do not look healthy and this could affect their production. In order to achieve high productivity on the Rabbit farm, disease control should be effectively carried out. Further, Ndem & Ogba (2017) explained that diseases in farm animals can cause more than 70 percent loss in farmer's output. They stressed that disease control of the farm animals should be one of the major actions to be taken by the farmer in order to achieve success in the farming business. The findings of Ndem and Ogba implies that disease control on the rabbit farm should be taken seriously in order to ensure that the farmer achieves success in the rearing of the rabbit. These are all in line with the findings of this present study.

Conclusion

The results of this research have revealed that the retired university lecturers need skills in housing of rabbit production, feeding rabbits and controlling diseases in rabbit production. Possession of these skills will enable the retired university lecturers to be engaged. As the skills are imbibed and utilized, income generation would be promoted.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Conferences, workshops, seminar and symposia should be organized by Ebonyi state by appropriate ministries on skills needed in rabbit production for the retired university lecturers.
2. Lecturers in Faculty of agriculture should ensure that rabbit farming skills are taught more vigorously to enable students acquire the skills which will help them on retire from service.
3. Government of Ebonyi state should always train the retired lecturers and other retirees on rabbit production through the skill acquisition centers in the state.

References

Aduku, A. 0. & Olukosi, J. 0. (2002). *Rabbit management in the topics.* Abuja: Publication (Nigeria) Abuja FCT, 171-189.

Aliiyu, S. U. (2000). *The Successful Production of Rabbit.* Extension Bulletin: No 47, Livestock Series, No.09 NAERLS EMST Abu-Zaria.

Aliiyu, S. U. (2002). *Raising rabbit: African farming food processing.* London: N. and W. Litto Ltd.

Bassey, S. G. (2014). *Rabbit Competency Needs of Farmers in Calabar Municipality local Government Area of Cross River State.* (Unpublished master Thesis). University of Calabar.

Ben C. B. (2010). *Vocational technical education in Nigeria.* Ibadan: Elsumme Educational Ltd.

Bolaji, O. S. (2005), *Annual Welfare Veterinary Science*. (Handbook) Ibadan: Evans Publishers.

Damron, W. S. (2006). *Introduction to Animal Science,* Global, Biological, Social and Industry Perspective (3rd Ed.) U. S. A. Pearson Education Inc.

Delacroix, L. (2000). *Longman active study dictionary*. London: New Edition Macmillan Ltd.

Eze, S. O. (2015). *Management of Annual and Environment.* (Unpublished lecture Note) Ebonyi State University.

Ezea, J. (2004). *Effects of Graded Levels of Toasted Lina bean (Phaeous Lunatus) Meal in Weaner Rabbit Diet.* B. Agric. Project College of Animal Science Michael Okpara University of Agricultural Umuahia.

Fielding, D. (2003). *Rabbit production*. London: Macmillan education limited.

Gillson, S. 0. and Morris, V. E. (2002). *Comparative study of various rabbit breeds for weights towards maturity (in French) doctoral thesis academic.* de Montpellier France.

Iwena, O. A. (2017). *Essential Agricultural Science for Senior Secondary Schools.* TONAD Publishers Limited, 4/6 Alhaji Sanni Street, Temidire Quarters, Lagos State.

Loosh, K. R. (1997). *Agricultural Science for West African College. (2nd Ed).* Lagos Johnson Publication Ltd.

Lukefahr, S. D. & Cheeke, P. R. (2001). *Progressive genetic applications for improved commercial production efficiency in rabbit Industry: North America rabbit congress.* Potland Page 161-175.

Ndem; J. U. & Elom Ogbonna (2016). Management skills in fish farming needed by the retired civil servants for sustainable income in Ebonyi State. *Journal of Biology, Agriculture and Health care*. 6(4)26-31

Ndem; J. U. & Ogba E. I. (2017). Bio-security measures needed by rural poultry farmers for effective disease prevention. *International Journal of Advances in agricultural and Technology*. 4(8)1-9.

Ogieva E. (2003). *Comprehensive agriculture science for senior secondary if Schools.* Lagos: A Johnson Publishers Ltd.

Turnbull, J. (2010). *Oxford advanced learner's dictionary of current English 8 edition.* New York: Oxford University press U.S.A.