

ANIMAL RIGHTS AND WELFARE ADVOCACY FOR ENHANCED FOOD SECURITY IN NIGERIA

IFENKWE, G. E

Department of Rural Sociology and Extension.

Michael Okpara University of Agriculture, Umudike.

E-mail: godwinifenkwe@yahoo.com.

ABSTRACT

The tropical conditions of the Nigerian environment favours domestic and wild animal production. It, therefore, not only offers ample investment opportunities in the livestock sub-sector of the economy, but also guarantees food security for the nation. This study examined basic animal welfare rights, and ascertained selected stakeholders advocacy and welfare promotion efforts in Nigeria. It entailed extensive review of ADP reports and selected national newspapers for a period of six months. Findings indicate a low level of animal welfare/rights consciousness in Nigeria. The efforts of the ADPs in promoting animal welfare technologies, is commendable. The print media (newspapers) have not abdicated their advocacy roles regarding animal welfare/rights promotion. The paper reminds stakeholders of their onerous task of educating the populace on animal welfare rights that would enhance food security and subsequently promote human welfare.

Key words: Animal welfarism, Advocacy Journalism, Food Security.

INTRODUCTION

Let the earth produce all kinds of animal life: domestic and wild, large and small. This was God's command in the story of the creation of the universe (Gen. 1²⁴) many years ago. *Ferae naturae*, animals that are wild by nature (lion, elephant, monkey etc.) exhibit vicious propensities, and any person who keeps them does so at his/her own risk (Ndukwe, 1999). The tamed or domesticated ones (sheep, goat, cow, etc.) are docile and are not dangerous, but may be forced by circumstances to exhibit dangerous character.

Animals have since creation been of immense benefit to mankind, the most prominent being their contributing to the basics of man's food (Table 1). Whereas animals eat plants and convert the amino acids derived therefrom to proteins, according to their needs, human beings eat animals and plants, and again rearrange the nitrogen contained to make the pattern of amino acids required (Ettinger, 2004).

Table 1: Utility Value of Animals

S/N	Function	Specific value
1.	Output function	Keeping animals for direct consumption of food and non-food products such as wool, hair, manure, and urine.
2.	Input function	Animal products provide input for other activities: manure, urine and grazing; fallow land are beneficial for crop production; stubble fields help pastoralists to feed their animals; animals give draught power for transport and their hair, hoofs and manure help to disperse seeds and improve seed germination; animal grazing prevents bush fire and controls shrub growth, stimulates grass tillering and breaks up hard soil crusts.
3.	Asset function	Animals permit farmers to raise money in times of need; valuable for medical and veterinary research.

4.	Socio-cultural function	Livestock as pets are part of the household, and are indicators of social status; festivals and fairs are based on livestock (bullock cart racing, cock fighting, cow beauty contests); many songs have been written about livestock.
5.	Security	Police dogs and other specialized animals used in search and rescue operations; dogs serve as guides for the blind.

Source: Maarse, 2010.

The tropical conditions of the Nigerian environment favours domestic and wild animal production. The Federal Government of Nigeria, in 1992, commissioned Resource Inventory and Management (RIM) Limited to undertake a comprehensive assessment of Nigeria's livestock resources. The survey estimated Nigeria's total livestock population at 201,350,000, comprising poultry (14,300,000), goat (34,500,000), sheep (22,100,000) and cattle (13,900,000). Others are donkey (900,000), horse (200,000) camel (90,000), pig (3,500,000) and dog (4,500,000). The rest are rabbits (1,700,000), guinea pigs (500,000) and giant rats (60,000). The livestock sub-sector, therefore, offers investment opportunities in beef, dairy, poultry, sheep, goat, rabbit and swine production, as well as in feed production, abattoir/slaughter house development and livestock-based industries (FMAWARD, 1986).

In recognition of this, and the ecological zoning of the country: Sahel (arid), Sudan (semi-arid), Guinea (sub-humid), Forest (humid), Plateau and montane; the Federal Government of Nigeria has encouraged the production of different classes of livestock in zones with comparative geographical and production advantage. Domestic animal food supply in Nigeria is supplemented with hunting and trapping of wild animal species (Nzegbule and Meregini, 1999). Common among them are the Antelope (*Tradelapheus euryceros*), Tortise (*Kinixyx belliana*), Cane rats (*Thryonomys swinderianus*) and Bush fowl (*Francolinus lathiani*). Others are Leopard (*Pantheraleo*), Porcupine (*Hysteris spp*) and Giant snail (*Archachatina marginata*).

The agricultural policy plan of Nigeria, not only provides for domestic animal production, but also protection of all wild life especially the endangered species. It also provides for the establishment of parks, game reserves and recreational facilities in line with the ecological diversity of the country (FMAWRRD,1987). There is, therefore, no gainsaying the fact that judicious management of the livestock and wild life species of the country would address the food security challenges of the country (Abubakar, 1999).

The Problem

Alongside the authority or power given to man to control fish, birds and animals on earth (Gen. 1²⁶) is the obligation and commitment of cater for these animals. The obligations, according to the American Veterinary Medical Association, include showing concern for all aspects of animal well-being: proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling and, when necessary, humane euthanasia. The level of understanding and implementation of this obligation in Nigeria, and other parts of Africa, seems quite low and unsatisfactory, considering the overt and covert actions of animal producers and handlers in the country. Dynamic agricultural practices, routine animal husbandry practices and animal research activities have tended to cause injury to animals and, in extreme cases, have affected the survival of endangered species. A few examples would suffice.

First, the shrinking of available grazing land in some parts of the country is an agricultural liability that has impacted negatively on availability of animal protein, and on food security. The reason is that the common property regime which allows pastoralists to

sustainably manage vast areas of land is now seriously undermined by laws and policies that promote individualization of land tenure, leading to loss of dry season grazing reserves and restriction of livestock mobility (Davis and Roba, 2010).

Second, housing imperatives for farm animals have been seriously compromised in Nigeria and other parts of Africa. Geerlings (2010) reported the situation in Fayoum governorate, one of the most densely populated areas in Egypt where poultry is put on the roof of houses. Any housing arrangement or shelter for living organisms that fails to fulfill physiological needs (proper temperature, pure air, adequate space, etc.); psychological needs (adequacy, privacy, cleanliness, opportunity for community life etc.); protection (against contagion, inferior sanitation or vermin, accidents) is grossly deficient (Onibokun, 1985). The battery cage system for rearing birds is one of the practices that limit the natural behaviour of birds. While this has been banned in Germany, Switzerland, Sweden and Austria, the entire European Union is phasing it out by 2010 (BBC News, 1999).

Third, animals have remained major objects of experimentation. Udedibie *et al.* (2008) in one experiment, slaughtered eight birds to determine haematological indices and internal organ weights. These birds were defeathered, eviscerated, dressed; and their internal organs (liver, gizzard and heart), as well as abdominal fats weighed. Laseinde (1996) in a similar research deprived 240 day-old broilers, cockerel and pullet chicks of feed, water, brooder heat or a combination of these to simulate similar careless or accidental farm situations so as to find their effects on chick's survival.

When an organism is deprived of food, alternative adaptive mechanisms parcel micronutrients to maintain body integrity, and when adaptation mechanisms are compromised, serious disease and death result (Ettinger, 2004). Jewish teachings allow animal experimentation. Although Buddhism also acknowledges the value of animal research for human health, it is believed that bad karmic consequences await an experimenter who fails to exhibit a high level of altruistic behaviour in research laboratories.

Finally, animals subjected to common livestock management practices (tattooing, castration and dehorning), unarguably suffer extreme discomfort, and their health is endangered. In this, and all other cases highlighted, the animals, were helpless. Being naturally bereft of speech, they lacked the power of self advocacy and collective bargaining against the ill treatment they suffered. Unlike the situation in most parts of Africa, animal welfare matters are recognized, respected, defended and promoted in developed countries. There is, therefore, need for a change because animals are crucial for enhanced food security in Nigeria. Concern for animal value, welfare and rights, and the need to stem the losses arising from ignorance or carelessness on the part of livestock producers and handlers prompted this study. This study highlighted basic animal welfare rights, and assessed extension agencies' and newspapers' efforts in educating and promoting animal welfare issues in Nigeria.

METHODOLOGY

Extensive literature search yielded information on animal welfare/rights. In Abia State, the contents of technical messages disseminated by Agricultural Development Programmes (ADP) were also verified. Finally, six (6) national newspapers were randomly selected and analyzed for a period of six months (Jan-June, 2010) to ascertain their advocacy efforts regarding the welfare of livestock and wild animal species in Nigeria.

RESULTS AND DISCUSSION

Concept of Animal Welfarism

Animal welfare philosophy is the position that it is morally acceptable for humans to use non-human animals, provided that adverse effects on animal welfare are minimized as

much as possible. (Garner, 2005). Saunders Comprehensive Veterinary Dictionary defined animal welfare as the avoidance of abuse and exploitation of animals by humans by maintaining appropriate standards of accommodation, feeding and general care; the prevention and treatment of disease; and the assurance of freedom from harassment and unnecessary discomfort and pain. (<http://medicaldictionary>).

Animal welfare focuses on practical or organized care for the health, safety and comfort of animals. This means ensuring the physical and psychological well-being of farmers through fulfilling the basic needs of non-human animals such as food, shelter and health (Hewson, 2003). Biblical injunctions on animal welfare are found in Deut. 11¹⁵, Exod. 20¹⁰, Deut 5¹⁴, Deut. 12¹⁴, Gen. 9⁴, Lev. 22²⁸, Deut. 25⁴ and Deut. 22¹⁰

Human and animal welfare/rights philosophies are interrelated. Human rights philosophy is derived from the pre-eminence given to man as a unique creature of God, made in the image of God and after His likeness; given dominion over all other creatures and endowed with supernatural dignity and with inviolable rights. (Genesis 1²⁶⁻³⁶). The universal declaration of Human rights, in 1948, has further strengthened human rights consciousness globally. Ordinary animals possess a high level of sentience just as human animals (man), and various religious groups of the world recognize animal welfare philosophy. They accept that it is man’s responsibility to cater for the welfare of all classes of animals (Table 2).

Table 2: Animal – Friendly Religious Thoughts/Belief

Christianity	Buddhism	Islam	Judaism	Hinduism
<ul style="list-style-type: none"> Any mistreatment of animals is both sinful and morally wrong. God made his covenant with animals as well as human beings. Human and non-human animals have the same origin in God. In the Garden of Eden, human beings lived in harmony with animals . God wants everything he created treated respectfully. 	<ul style="list-style-type: none"> Buddhism, requires us to treat animals kindly. Buddhists see human and non-human lives as closely related Buddhists treat the lives of human and non-human animals with equal respect. 	<ul style="list-style-type: none"> All living creatures were made by Allah Allah loves all animals Animals exist for the benefit of human beings Animals must be treated with kindness and compassion. Laws on killing animals are designed to reduce the pain and distress that the animals suffer. 	<ul style="list-style-type: none"> Animals have feelings and relationships. The righteous person regards the life of his beast. Human beings must avoid <i>tzar baalei chayim</i> causing pain to any living creature. 	<ul style="list-style-type: none"> Sacred cows are allowed to wander wherever they like, and even through traffic. Most Hindus are vegetarians Butchery and related jobs are restricted to people of low caste. Cows are sacred to Hindus Some Hindu gods keep sacred animals Some Hindu gods have animals characteristics.

Animals Rights

Concern for animal welfare is a crucial factor that drives the urge to fight for animal rights. Whereas animal welfare position emphasizes the responsible management of animals to satisfy man's welfare needs, animal rights proponents fight against any deliberate form of exploitation or condition that cause extreme discomfort, or endanger health or life of animals, and which may in the long run lead to species extinction or low productivity (Regan, 1983; Garner, 2005; Francione, 2007). People acquire animals on a temporary or permanent basis, and either through inheritance, purchase or gift. Subsequently, they become responsible for the welfare of such domesticated animals; caring for, controlling and protecting them from harm.

Animal rights consciousness has a long history, and has been embraced in Europe, America and other developed countries. Under the animal rights law, a person commits an offence if he/she causes an animal unnecessary suffering. Section 4, 3^{a-c} of the British animal welfare act holds that suffering is considered necessary if it could reasonably not be avoided or reduced; if the conduct which caused the suffering was in compliance with a relevant enactment or provisions of a license or code of practice under an enactment; if the conduct which caused the suffering was for a legitimate purpose such as benefitting the animals, protecting a person, property or another animal; if the suffering was proportionate to the purpose of the conduct concerned; and if the conduct concerned was, in all the circumstances, that of a reasonably competent and humane person.

In practice, a person commits an offence if he/she covertly or overtly adopts any management practice which limits the natural behavior of animals. These, according to Philips (2009), include: failure to meet welfare needs (food, shelter and health); factory farming, where farm animals are raised in confinement at high stocking density; carrying out prohibited procedures on the animal for research and other purposes; carrying out invasive procedures such as debeaking, mulesing, tattooing, dehorning or castration; premature slaughtering or chick culling of food animals; adopting cruel methods of animal slaughter, especially ritual slaughter; staging or recording animal fights as a sporting or recreational event; administering poison to animals and severally hitting an animal to be slaughtered with iron rod to enhance meat quantity.

Unlike man whose clamor for improved welfare is facilitated by his speech endowment, lack of this enablement is a serious setback for animals aptly described as "the silent majority". Animals are incapacitated to fight for their welfare or rights or to respond to the contingencies of life and so need to be assisted.

The western world are by far ahead in animal welfare campaign. The activities of animal welfarists like Hugh Fearnley-Whittingstall, Robert Nozick, Andrew Linzey and Richard Martin in this regard are noteworthy. It is also difficult to forget the achievements of such animals welfare advocate groups as the People for the Ethical Treatment of Animals (PeTA), the Humane Society of the United States (HSUS), the American Veterinary Medical Association (AVMA) and the Humane Society International (HSI). These individuals and organizations have been vociferous against different forms of animal exploitation and abuse.

Recently, the trade policy for the Humane Society International urged the World Trade Organization to include animal welfare provisions in international trade policy and agreements, arguing that better animals welfare standards and practices not only would catalyze reform of the farm production, but will result in a number of significant benefits including expansion of domestic and international opportunities, enhanced food safety and quality, premium pricing and mitigation of the spread of infectious diseases.

Animal Welfare: Role of Extension Agency

The Agricultural Development Programmes (ADPs) were created in the 1970s as the human agency with the statutory roles of encouraging widespread dissemination and assimilation of agricultural research findings. To facilitate this, the priority areas in agricultural research in Nigeria were restructured to include increasing production and productivity of livestock through the development of (i) improved and adapted breeds for increased meat, milk and carcass quality (ii) vaccines for controlling animal diseases and (iii) Livestock feeds from local raw materials (MAMSER, 1986).

Investigations revealed that the ADPs in the nine states, constituting the South-East agro-ecological zone of Nigeria, transferred extension messages and technologies on major livestock species, namely, goat, sheep, poultry, cane rats and rabbits. The key livestock technologies transferred by Abia ADP in 2008 are shown in Table 3. It can, therefore, be concluded that the extension agency in south –eastern agro-ecological zone of Nigeria has shown appreciable interest in promoting animal welfare.

Although the documents reviewed (NRCRI, 2006) did not give details of depth of coverage, the topics covered are those that enhance the well-being of the animals. They include general management principles, housing, feeds and feeding, health care, record keeping, stocking, breeding, pest and diseases. The only aspect of animal welfare that was not highlighted in the reports reviewed is the practice of euthanasia. Active euthanasia or mercy killing is the deliberate taking of life of an organism suffering from an incurable disease or condition, whether by administering a lethal drug or by withholding ordinary medical care, while passive euthanasia is the discontinuation of an extra ordinary life-preserving means (Odell and Odell, 1983).

Table 3: Livestock Technologies Disseminated in Abia State

S/N	Technology	Objective	Extended Technical Messages
1.	Sheep and Goat	To increase protein intake of farmers	Housing Feeds and feeding Health management Record keeping
2.	Rabbit keeping	To increase, at a minimum cost the protein intake of farmers	Use of hutches Feeds and feeding Handling of kittens Health management Record keeping
3.	Poultry	To increase protein intake of farmers and to reduce death rate due to poor sanitation	Housing Feeds and feeding Health management Record keeping Artificial brooding
4.	Cane rat domestication	To increase protein intake at a minimum cost	Housing Stocking Feeds and feeding.

Source: Abia State ADP Report, 2009.

Mass Media Advocacy for Animal Welfare/Rights

Data on Table 4 show that the print media (Newspapers) in Nigeria have not totally abdicated their advocacy responsibilities with regard to animal welfare issues. There is evidence of animal rights consciousness or campaign aimed at, among other things, achieving

changes in animal rearing and handling behavior. The study identified a total of twenty (20) articles considered relevant because, as news items, feature articles or adverts, they were either designed to promote animal welfare or to highlight obnoxious livestock/wildlife management practices.

The mass media is globally recognized as credible promoters of issues of public interest, and Philips (2009) had observed a growing interest in animal welfare globally with increasing attention being paid to it by the media, government and non-governmental organizations. It is in our best interest for stakeholders, including the mass media to recognize that animal welfare translates to enhanced food security, and by implication, improved human welfare.

Table 4: Newspapers' Animal Rights/Welfare Advocacy (Jan-June, 2010)

Title or Topic	Month	Newspaper	Focus
Vegetable-based feed formulation	Jan. 1	The Sun	Advocacy for veganism and good nutrition.
Bulls charge, killing spectators	Jan 4	Guardian	Advocacy against animal sports.
Australian man caught with pigeons stuffed in trousers.	Jan.5	Guardian	Advocacy against abuse and exploitation of animals.
Healing animals and getting them back to bush	Jan 7.	The Sun	Wild life conservation
Healthy pet lifestyle	Jan 8.	The Sun	Animal welfare provision
Newly imported poultry cages	Jan. 14	Guardian	Enhanced physiological and psychological wellbeing
Animal improvement tips	Jan. 24	Daily Independent	Animal welfare provision
The new vaccination and autism scare	March 5.	Guardian	Animal welfare provision
Tips on farm disease prevention	March 15	Guardian	Animal welfare provision
African freshwater species face extinction	March 22.	Guardian	Preserving endangered species
FCT adopts new policy for animals haulage and handling	March 26.	Guardian	Advocacy against abuse and exploitation of animals.
Group advocates on livestock reform	April 7	Punch	Advocacy against animal abuse and exploitation
Animal surveillance and disease control	April 3	This Day	Animal welfare provision
Fadama disburses 61M for livestock development	April 20	Daily Independent	Animal welfare Provision
FG votes 244 billion for agriculture development including livestock.	April 30	Daily Independent	Animal welfare provision
UNs FAO boosts livestock in Niger, Chad	April 29	Punch Newspaper	Animal Welfare Provision
Noise pollution threatens fish and wildlife	May 3	Guardian	Advocacy for wholesome environment
Endangered tiger found in a man's freezer	May 19	Guardian	Advocacy for wild life conservation

Red apes are slipping into extinction	June 6	Guardian	Advocacy for wildlife conservation
Whale hunt talks in Morocco ends in stalemate	June 15	Guardian	Advocacy for wildlife conservation.

CONCLUSION AND RECOMMENDATIONS

Concern for animal welfare is usually driven by man's recognition of utility of animals, feeling for their sentience nature, respect for biblical injunctions and the desire to preserve endangered species. The low level of consciousness of the need for animal welfare/rights in Nigeria is as worrisome as it is challenging to stakeholders in livestock and related areas: extension agents, veterinarians, religious organizations, human nutritionists, judicial and legislative practitioners, as well as mass media operatives etc. The solution to this problem lies in proper education and increased advocacy motivated by sympathy, empathy, aesthetics and/or self interest.

Although the ADPs have championed the cause of animal welfare in their regular programmes, they should embark on a systematic campaign to further sensitize the general public on what constitutes animal abuse. This campaign should be extended to all levels of educational institutions and should culminate in formation of animal-friendly clubs and associations to further propagate the message in the communities. Livestock management systems which preclude animals from exhibiting their natural behavior (mating, sufficient space, company of animals own kind) and which negatively affect the psychological well-being of animals and reduce productivity, should be discouraged.

Human nutritionists should, on their part, intensify the campaign to extol the virtues of vegetarianism. There is need for more people to embrace veganism that is, relying on plant-based food and synthetic clothing. Besides furthering animals welfare interests, it is a socially –acceptable way of reducing dietary fat and achieving overall healthier lifestyle. Although the benefits of bio-medical research for animals and human beings are well documented, there is a compelling need for scientists to adopt a utilitarian, humane and compassionate approach in animal experimentation, as well as in the slaughter house/abattoir activities by limiting the stress, pain and fear experienced by the animals.

Animal welfare reforms, activism and advocacy have indeed become very necessary for a country like Nigeria and the three tiers of legislative governance in Nigeria should contribute to the development and enforcement of animal welfare/rights laws. Finally, the mass media in Nigeria needs to continue play its traditional advocacy roles in matters of public interest such as animal welfare.

REFERENCES

- Abukakar, M.M. (1999). The Problems of Livestock Production and Management in Nigeria: The Way Forward. Agricultural Development in the 21st Century: Concepts and Strategies. Kushwaka, S. et al (Eds) Proceedings of the 14th Annual Conference of Farm Management Association of Nigeria (FAMAN) 20-23 Sept, 1998. ATBU Bauchi.
- BBC News (1999). EU Bans Battery Hen Cages 28/01/1999. <http://news.bbc.co.uk>.
- Davis, J. and Roba, G.M. (2010). Pastrolism: Shifts in Policy Making. *Farming Matters*. March 2010, P. 33.
- Ettinger, S. (2004). Micronutrients: Carbohydrates, Proteins and Lipids In: Krause's Food, Nutrition and Diet Therapy 11th Edition. Mahan, L.K. & Escott-Stump, S. (Eds). Elseviers. USA. P. 73.
- FM AWARD (1986). Federal Ministry of Agriculture, Water Resources and Rural Development) Investment Opportunities in Nigerian Agriculture, Lagos Nigeria.

- FM AWRRD (1987). (Federal Ministry of Agriculture, Water Resources and Rural Development) Agricultural Policy for Nigeria. Reproduced for Mass Distribution by MAMSER Abuja.
- Francione, G. (2007). *Animals, Property and the Law*. Temple University Press.
- Garner, R. (2005). *Animal Ethics*, Polity press. Pp. 15-16.
- Geerlings, E. (2010). Uncertain Times in Egypt. *Farming Matters*. March 2010. P. 3.
- Hewson, C.J. (2003). What is Animal Welfare? Common Definitions and their Practical Consequences. *The Canadian Veterinary Journal*
<http://www.ncbi.nlm.nih.gov/pmc/articles/pmc340178/#r11-23>.
- Laseinde, E.A.O. (1996). Survival Potential of Stressed Chicks. *Nigerian Journal of Animal Production*. Volume 23, No 2, NSAP, P. 205.
- Maarse, T.L. (2010). Livestock – A Smart Solution for Food and Farming. *Farming Matters*, March 2010. P. 7.
- Ndukwe, E. (1999). Some Aspects of the law and Agricultural Transformation in the next Millennium. In: A.C. Nwosu *et al* (eds) *Agricultural Transformation in Nigeria*. Proceedings of a National Conference in Honour of Prof. M.O. Ijere, Federal University of Agriculture, Umudike 24-26 August, 1999.
- NRCRI (2006). The Challenges of Research Extension Farmer Input Linkage System in Poverty Alleviation, Youth Empowerment, Food Security and Export. In Nigeria Udealor et al (Eds) *Proceedings of the 20th Annual Zonal REFILS workshop*, 21-25 Nov. 2006. Yenegoa, Bayelsa State.
- Nzegbule, E.C. and Meregini, A.O.A. (1999). Applying Indigenous Knowledge in Conserving Biodiversity in Okigwe South, Imo State, Nigeria. *Journal of Sustainable Agriculture and the Environment*. Michael Okpara University of Agriculture, Umudike 1(1): 95-100.
- Odell, C. and Odell, W. 1983). *The First Human Right. A Pro-life Primer*. Our Sunday Visitor Inc. Huntington Indiana, USA.
- Onibokun, A. (1985). Housing Needs and Responses: A Planner's Viewpoint. In: *Housing in Nigeria: A Book of Readings*. A. Onibokun (ed) NISER, Ibadan. P. 65.
- Philips (2009). *The Welfare of Animals: The Silent Majority*. P. 50-53.
- Regan, T. (1983). *The Case for Animal Rights*. University of California press.
- RIM (1992). (Resources Inventory and Management Ltd) *Nigerian Livestock Resources Survey* Vol. 11, RIM Ltd New Jersey USA.
- Udedibie, A.B.I; Enyenihi, G.E.; Akpan, M.J.; Obasi, O.L.; and Solomon, I.P. (2008). Physicochemical Nature and Nutritive value of Dried Cassava Fufu meal for laying Hens" *Nigerian Agricultural Journal*. 39 (1) 44-49.