

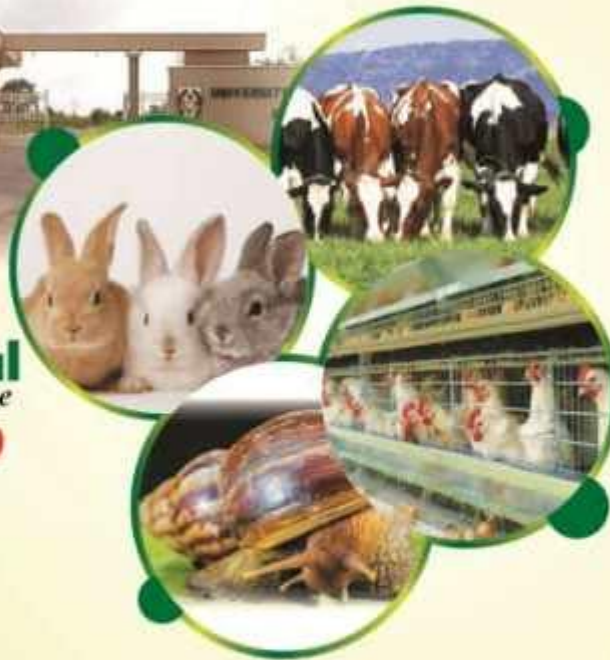


**NIGERIAN SOCIETY  
FOR ANIMAL PRODUCTION (NSAP)**



**44<sup>TH</sup> Annual  
Conference  
Abuja 2019**

**DATE:  
17<sup>TH</sup>-21<sup>ST</sup>  
MARCH,  
2019**



**THEME:**  
**Repositioning Livestock Industry  
for Sustainable Economic Development  
in a Diversifying Economy**

 Faculty of Science Lecture Theatre,  
University of Abuja.

*Programme*

**THE 44<sup>TH</sup> ANNUAL CONFERENCE OF THE  
NIGERIAN SOCIETY FOR ANIMAL  
PRODUCTION**

**March 17 – 21, 2019**

**Abuja, Nigeria**

**The Proceedings of  
The 44<sup>th</sup> Annual Conference of The Nigerian  
Society for Animal Production**

**Editors:** R .A. Oluwafemi, O.A. Olafadehan, B.Y. Abubakar, A.A. Adeniji and A. Jubril

**Hosted by University of Abuja, Abuja, Federal Capital Territory (FCT) and  
Organized Under the Auspices of Nigerian Society for Animal Production**

Published by Nigerian Society for Animal Production (NSAP)

Copyright© 2019 NSAP

Allright reserved

ISBN: 978 90709-7-8

(Supplied by Signa Publishers)

This work is licensed under the Creative Commons

Attribution-Non-commercial 3.0 Unported License.

To view a copy of this license, visit

<http://creativecommons.org/licenses/by-nc/3.0/>

or send a letter to: Creative Commons 171, Second Street, Suite 300 San Francisco, California 94105, USA

To order additional copies of this book, please contact

Nigerian Society of Animal Production

National Animal Production Research Institute (NAPRI),

Ahmadu Bello University PMB 1096, Shika, Zaria, Kaduna State, Nigeria

E-mail: [info@nsap.org.ng](mailto:info@nsap.org.ng)

**Disclaimer**

This proceedings was produced using articles supplied by authors and contributors. Minimal editing involving spelling and grammatical corrections were carried out. Therefore, all statements, conclusions and opinions expressed in the articles remain those of the authors and contributors. The mention of specific organizations or products does not imply any intention to infringe proprietary right nor should it be construed as an endorsement or recommendation on the part of the editors and members of the scientific and technical committee. It is recommended that these be verified independently.

**SCIENTIFIC SESSION**

<b>S/NO</b>	<b>TITLE</b>	<b>AUTHOR(S)</b>	<b>PAGE</b>
	<b>ANIMAL GENETICS AND BREEDING</b>		
	Assessment of spline functions for estimating growth curve parameters of FUNAAB-alpha chickens	H.A. Bashiru, S.O. Oseni and L.A Omadime	1-4
	Heterosis and combining ability for body weight and morphometric traits in a diallel cross of FUNAAB alpha chickens	H.M. Ideozu, V.U. Oleforuh-Okoleh and U. A. Dike	5-9
	Up-grading indigenous chicken with sire line (SG-98)cocks of Shika Brown® in villages around Zaria, Kaduna State	Olutunmogun, A.K., Umar, A.U.,Rekwot, G.Z., Adejoh-Ubani, E.O. and Nwagu, B.I.	10-13
	Auto-sexing potential and growth performance in Rhode Island, Nigerian local chickens and their reciprocal crosses	Jubril A. E., Fayeye T. R. and Gunn H. H	14-17
	Bulk density and crude protein composition of some protein feed ingredients obtained from outlets in Owerri, Nigeria	Samuel C. Igwe and Edeheudim B. Etuk	18-21
	Prediction of Japanese quail Egg weight using egg components as regressors	Adeyemi, E. A.	22-26
	Phenotypic characterization of dactyl thoracic index of Nigerian indigenous sheep population	Popoola M.A., Olaniyi T.A., Yahaya M.O., Ajibola H.O. Agboluaje Y.O., Dudubo E.D. and Badejoko B.O.	27-30
	Hygienic factors that influence meat quality; a review	Adebayo, O.A., Arogbodo, J.O and Awoniyi, T.A.M.	31-35
	Genetic diversity of mitochondrial DNA (MTDNA) d-loop sequences in six improved tropically adapted chicken breeds (itabs)	Mirian C. Okani-Onyejiaka, U.E. Ogundu, O. Bamidele	36-39
	The Nigerian local chicken hormonal functional status as influenced by age and sex factors	Gunn, H. H, Oleforuh-Okoleh, V.U and Jubril, A.E	40-43
	Principal Component analysis of	Abdulyekeen O. Abdulraheem, Abdulrazaq O.	44-47

	morphological characteristics of indigenous chickens in Borno State, Nigeria	Raji, Nurudeen K. Alade, Jibril Aliyu, Ibrahim D. Mohammad	
	Polymorphism of ovocalyxin-32 gene among six Nigerian chicken populations	Emmanuel-Udeozor Ohagenyi I. J, Oleforuh-Okoleh V. U, Ikeh N. E, Egom M. A, Nnajofofor N. W, Udeh F. U, Ogbu C. C.	48-51
	Prospects in the utilization of assisted reproductive technologies (art) towards improved cattle production in Nigeria	Chike F. Oguejiofor	52-56
	Age estimation in Sahelian goat using horn distance and body length in Nigeria	Abdullahi, A.U., Bello, A., Shehu, S.A. and Garba, S.	57-60
	Phenotypic correlation of morphometric traits in New Zealand White rabbits reared under tropical condition	Abe, O.S., Amusan, S.A. and Ozoje M.O.	61-64
	On station performance evaluation of improved tropically adapted chicken breeds for smallholder poultry production systems in Nigeria	O. Bamidele, E.B. Sonaiya, O.A. Adebambo, and T. Dessie	65-69
	Male-Specific Region (Msy) Genes - Potential Fertility Markers For Selection Of Indigenous Bulls For Artificial Insemination	Sikiru A.B., Arangasamy A., Egena S.S.A., Alemode I.C., Makinde J.O, and Lawal S.O.	70-72
	Sexual differentiation and phenotypic correlations among biometric traits of Nigerian local turkey ( <i>Meleagris gallopavo</i> )	Adeoye, A.A., Udo, J.E. and Oladepo, A.D.	73-76
	Evaluation of four classical non-linear models to describe the growth curve of FUNAAB-alpha chickens	H.A. Bashiru, S.O. Oseni and L.A Omadime	76-80
	Estimate of direct and percentage heterosis of body weight and linear body measurements of rabbits	E. N. Obasi, I. U. Obasi, R. J. Nosike, O. M. Obike and S. N. Ibe	81-85
	Farmers' choice of breeding stock and trait preferences in tropically-adapted chickens in five agro-ecological zones in Nigeria	Yakubu, O. Bamidele, W. A. Hassan, F. O. Ajayi, U. E. Ogundu, O. Alabi, E. B. Sonaiya and O. A. Adebambo <sup>7</sup>	86-90
	<b>ANIMAL PHYSIOLOGY, REPRODUCTION AND BIOTECHNOLOGY</b>		
	Effect of dosage of vitamin E on physiological and blood	Abioja, M.O., Abiona, J. A., Akinjute, O.F., Tomori, A.A., Abdul, A.A., Adebodun, M.A., Olowu, B.N.,	90-94

	parameters in growing arbor acres pullets under humid tropical conditions	Oyebowale, H.D., Fagbemi, O.I., Oloruntola, T.R., Olaniyan, O.I. and Akomolafe, O.O.	
	Oestrus Behaviour And Hormonal Characterisation Of The Oestrous Cycle Of Jennies Synchronized With Single Treatment Of Pgf $2\alpha$ (Lutalyse®) And Jennies Not Synchronized, In Zaria Nigeria	Hassan, R., Oke-Egbodo, B. E., Bello, T. K., Hussaini, M., Abdullahi, M. and Maikaji, F.S	95-98
	The effects of aqueous ginger ( <i>Zingiber officinale</i> ) extract on sperm quality and haematology in lead acetate treated male albino rats	Rita I. Odo, Edmund C. Mbegbu, Lawrence N. Anyanwu	99-102
	Chicken growth hormone polymorphic variation and its association with economic traits– a review	Adigun, U.O., Egena, S.S.A. and Tsado, D.N.	103-106
	Blood profile of Finisher broiler chickens fed diets supplemented with melon and walnut seed meal	Olufeko, S. O., A. B. Omojola, O.A. Ogunwole and I.A. Oludoyi	107-111
	External egg quality characteristics of seven-chicken strains from south-western Nigeria	Atansuyi, A.J., Falade, O.A., Ihendu, U.C., Adu, A.O. Chineke, C.A. and Adebayo, O.T.	112-116
	Growth performance of six tropically-adapted chicken breeds in backyard flocks across Kebbi state, Nigeria	Saidu Suleiman, Waheed Hassan and <sup>1</sup> Oladeji Bamidele	117-121
	Semen indices and seminal zinc concentration of male rabbits fed diets supplemented with zinc	Adeyemi A.A., Ayeni S.T., Ibrahim O.W. and Ajayi O.O.	122-126
	Comparative histomorphological study of the one humped camel ( <i>Camelus Dromedarius</i> ) thyroid gland	Shehu, S.A.; Bello, A.; Sonfada M. L.; Umar, A.A., Danmaigoro, A.; Umaru, M.A.; Jibrin, A. Garba, S.; Abdullahi, A.U	127-130
	Pointed-end” and “blunted-end” egg shape biased sex of Japanese quails at national Veterinary Research Institute, Vom	Sati N. M., Emenna P. E., Idahor K. O., Yakubu D. B., Mwadkon P. B. and Mbuka J. J.	131-134
	Effect of bitter leaf meal ( <i>Vernonia amygdalina</i> ) on haematological indices and blood glucose level of rabbits	Odeyinka, S.M., Ayandiran, S.K., Arogundade, O.S. and Ganiyu, A.O.	135-138
	Effects Of locations on phenotypic characteristics of Fulani chicken ecotypes	Gambo, D., Momoh, O. M., Gwaza, D. S. and Addass, P. A.	139-143
	Hypo and hyper thermic stress effects on semen of male turkeys	Ogbu, O.C, Oguike M.A and Herbert, U.	144-147

	administered Moringa leaves and seeds extracts		
	Evaluation of four classical non-linear models to describe the growth curve of FUNAAB-Alpha chickens	H.A. Bashiru, S.O. Oseni and L.A Omadime	148-152
	Effect of vitamin C levels on percentage sperm abnormalities of chilled bull semen in egg yolk extender	Achi, J.N., Achi, N.P., Barje, P.P. and Alphonsus, C.	153-155
	Effect of common salt (NaCl) on haemocyte count and haemolymph biochemical parameters of Giant African Land snail ( <i>A. marginata</i> ) during dry season	Abiona J. A., Oyesanwen, M. T., Ayo-Ajasa, O. Y., Abioja, M. O., Oke, O. E. And Onagbesan, O. M.	156-160
	Semen indices and seminal zinc concentration of male rabbits fed diets supplemented with zinc	Adeyemi A.A., Ayeni S.T., Ibrahim O.W. and Ajayi O.O.	161-164
	Serum biochemistry of growing Japanese quails fed sun-dried yam peel meal based diet with maxigrain <sup>(r)</sup> enzyme supplementation	Aguihe, P.C., Kehinde, A.S., Halidu, S.K., Osaguna, P.O. and Jeje, C.A.	165-169
	Effects of location on reproductive and growth performance of Tiv chicken ecotype	Gambo, D., Momoh, O. M., Gwaza, D. S. and Bawa, M.	170-174
	Haematological and biochemical parameters of rabbits fed graded levels of <i>gracinnnnnnia kola</i> meal	S. U. Ilo, A. I. Onwusika, N. W. Nnajofofor and F. U. Udeh	175-179
	Sub-theme: animal physiology, reproduction and biotechnology mode of presentation: oral virgin birth in four strains of turkeys reared in Nigeria	C. C. Nwoga, H. M. N. Foleng, N. S. Machebe and S. O. C. Ugwu	180-183
	haematology and serum biochemical characteristics of broiler finishers fed diets containing cassava peel meal	S. U. Ilo, A. I. Onwusika N. W. Nnajofofor and C. Ezenwosu	184-188
	The effects of aqueous ginger ( <i>Zingiber officinale</i> ) extract on sperm quality and haematology in lead acetate treated male albino rats	Rita I. Odo, Edmund C. Mbegbu, Lawrence N. Anyanwu	189-192
	Haematological and serum biochemical indices of broilers fed inorganic and chelated trace	Ayoola A.A., Fafiolu A.O, Oluwatosin O.O, Osinowo O.A. and Ariyo O.W	193-196



	minerals		
	Blood profile of young doe rabbits fed diets containing two varieties of composite sweet potato ( <i>Ipomoea batatas</i> lam) meal in a palm kernel based diet	I.F. Olaleru, O.A.Abu and C.O. Okereke	197-201
	Comparative study on the semen quality characteristics of parthenotes and parent toms reared in Nsukka	Udeh, F.U., Ohagenyi, I.J., Ike, N.E., Onodugo, M.O., Udeh, V.C. and Ezea, J.E.	202-205
	Pointed-End And Blunted-End Egg Shape Biased Sex Of Japanese Quails At National Veterinary Research Institute, Vom	Sati N.M., Emennaa P.E., Idahor K.O., Yakubu D.B., Mwadkon P.B. and Mbuka J.J.	210-215
	<b>MONOGASTRIC ANIMAL PRODUCTION, NUTRITION AND FEED</b>		
	Effect Of Fresh Leaves And Succulent Stems (Flss) Of <i>Ficus Thonningii</i> As Feed Ingredient On Nutrient Digestibility And Carcass Characteristics Of Rabbits	* <sup>1</sup> Shaahu, D. T., Dzungwe, E. N., <sup>1</sup> Carew, S. N. and <sup>2</sup> Tuleun, C. D.	211-218
	Growth Performance Of Six Tropically-Adapted Chicken Breeds In Backyard Flocks Across Kebbi State, Nigeria	Saidu Suleiman, Waheed Hassan and <sup>1</sup> Oladeji Bamidele	219-223
	Management of guinea fowl under captivity in Bauchi State – a case study of Misau Local Government Area	Lalabe, B.C., Wafar, R. J., Sani, G S., and Yustus, S. F.	224-228
	Effect of high fibre diets with or without enzyme on sensory evaluation and meat characteristics of broilers chicken	Oshibanjo D.O., Samuel C. Etop, Nwaoru C.E., Sunday, Christiana A. Ukpong, Faleye O.A Akwashiki, M. A Samani B. P	229-234
	Effect of feeding yeast ( <i>Saccharomyces cerevisiae</i> ) as a probiotic in cassava based diets on the nutrient utilization of broilers	Okereke, C.O., Ekwe, C.C., Olaleru, I.F., Okiyi, P. and Onyeka, T.J.	238-241
	Growth performance and cost implication of broiler chickens fed fortified composite cassava stump meal-based diets	Adetunji, M. A., Ojambati, O. G., Adegbenro, M., and Aletor, V. A	242-246
	Comparative effects of herbal feed additives on Hematological and serum biochemical parameters of broiler chickens	Maidala, A., Mohammed, M., Ajighjigh, D.T., Zagi, S.P., Lawan, A. Makinde O.J. and <sup>1</sup> Adejumo., I.O.,	247-251
	Performance and economic	Okabuonye, O.F and Onunkwo, D.N	252-257

	evaluation of African giant land snail ( <i>Achatina achatinta</i> ) fed different levels of whole jackfruit meal		
	Effect of Quantum blue® enzyme supplementation on the growth parameters of weaner rabbits fed toasted castor seed ( <i>Ricinus communis</i> ) meal (TCSM)-based diets	Alu, S.E., Ari, M.M., Egya, I.O. and Onazi, B.O.	258-262
	Federal College of Wildlife Management, P.M.B. 268, New Bussa, Niger State, Nigeria.		263-267
	Effect of toasted castor seed ( <i>Ricinus communis</i> ) meal (TCSM)-based diets on growth performance of grower rabbits supplemented with or without Quantum blue® enzyme	Alu, S.E., Ari, M.M., Egya, I.O. and Onazi, B.O.	268-271
	Dietary effects of mixed saw dust with enzymes as a substitute for wheat offal on serum biochemistry of broiler starter (3-5weeks)	Ogungbenro, S.D., Akinosun, A.A., Adams, T.O., Bako, B.A and Omotosho, D. Y.	272-276
	Immunological response of broiler chickens fed graded levels of hot water- <i>Lagenaria breviflora</i> seed as supplement for full- fat soyabean	V. A. Adepegba and O. A. Abu	277-282
	Nutritive and phytochemical evaluation of some seeds as supplement in livestock diet	M.J. Adegbeye, I.O. Busari, I.F. Olaleru, O.A Apantaku	283-287
	Proximate composition of raw-dried and heat treated <i>Canarium schweifurthii</i> (atili) fruit as non-conventional ingredient in broiler diet	Adelowo, O. V., Oshibanjo, D. O. and Tangshwan, L. S.	282-286
	Effect of sex and strain on growth performance of Nigerian indigenous chickens (FUNAAB alpha and Yoruba ecotype)	Adewole F. A, Adeyemi, O.A., Bello, K. O., Lala, A. O, Famakinde S. A, Sanusi, Y. T. <sup>2</sup> and Egbeyale, L.T.,	287-290
	Carcass traits and relative organ weights of growing rabbits fed graded levels of processed kola nut ( <i>Cola nitida</i> ) pod husks	S.A Adeyeye, J.O Agbede, V.AAletor, O.D Oloruntola, S.O Ayodele, A.A Fadiyimu and K. Sule	291-295

	Carcass And Organ Qualities Of Broiler Finishers Fed Multi-Enzyme (Maxigrain®) Supplemented Soaked-Sundried Cassava Peel Meal Based Diets	Aguihe, P.C., Kehinde, A.S., Samuel, K.U., Jeje, C. A., Abdulwahab, S. and Ashifat, A.A.	296-300
	Evaluation of white and yellow maize ( <i>Zea mays</i> ) varieties on the performance of broiler chickens	Ajide, O.E., Onimisi P.A. and Ajibaiye, O.E.	301-304
	Performance characteristic of broiler birds fed varying levels of <i>Aloe-vera</i> gel in water	Akinosun, A.A., Balogun, A.S., Ogungbenro, S.D., Shobanke, I.A., Okunlola, O.O., Bako, B.A and Raji, I.T	305-309
	Growth Nperformance of grower rabbits fed diet containing boiled sorrel ( <i>hibiscus sabdariffa l.</i> ) seed meal	Aliyu, A M <sup>*</sup> , Duru, S and Bawa, G.S.	310-316
	Nutrient and phytochemical components of dried and fresh forms of <i>Talinum triangulare</i> investigated for possible use as nutraceutical in poultry and livestock production	C. J. Aronu, E. U. Onwurafor and C. G. Aronu	317-319
	Effect of litter size on growth performance of rabbit kits	Ayo-Ajasa, O. Y., Egbeyale, L.T. and Biyibi, O.	320-324
	Effect of baker's yeast ( <i>Saccharomyces cerevisiae</i> ) supplementation as probiotic on amino acid profile of broiler chickens	Buba, W., Shehu, B.M., Iyiola-Tunji, A.O. and Ojo, O.A.	325-329
	Response of growing turkeys to diets containing varying levels of toasted bambara nut ( <i>Voandzeia subterreneae l</i> ) waste	Edeh, h. O, ani, a.o, Ogwuegbu, M.C and Ugwu, K.E, Ilo, S.U	330-333
	Effect of different animal protein sources on performance of broiler chickens	O.O. Egbewande*, H.G. Ibrahim, M.N. Mawoli and L. Bashir	334-337
	Effect of neem ( <i>Azadirachta indica</i> ) leaf meal on the growth performance and carcass characteristics of male growing rabbits	Egbeyale, L. T., Ayo-Ajasa, O. Y., Adeleye, O. O., Ayoola, A. A, <sup>1</sup> Adewole, F. A. and Fashina, B. O.	338-342

	Proximate composition and feeding value of ensiled blend of cassava root meal, wet brewers' grains and palm kernel cake in starter broiler diets	Emenalom, O.O Etuk, E. B., Okoli, I.C., Aladi, N.O. Okehie U.N. and Agidi C	343-347
	Proximate composition and feeding value of ensiled blend of cassava root meal and wet brewers' grains in starter broiler diets	Emenalom, O.O., Etuk, E.B., Okoli, I. C., Aladi N.O., Okehie U.N. and Njemanze, O.I.	348-351
	Effect of methionine types on the carcass characteristics of broiler finisher.	George, V., Bawa, G.S., Nyarko, M. and Mallam, I	352-355
	Carcass characteristics of rabbits fed different forages as supplement	H. Ibrahim, O. O. Egbewande, M.T. Ibrahim and M. Usman	356-360
	Potentials Of Rice Husk Meal Treated With Different Methods As A Substitute To Brewer's Dried Grain On The Performance Of Finisher Broilers	J. N. Ikpe*, E. C. Oko*, I. C. Vining-Ogu** & F. A. Ujah	361-365
	Nutritional composition of housefly larvae meal: a sustainable protein source for animal production – a review	<sup>1</sup> Gadzama, *I. U., <sup>2</sup> Yashim, S. M. and <sup>3</sup> Ndudim, R. K.	366-370
	Effects of supplemental selenium and $\alpha$ -tocopherol on hen performance and egg nutrients deposition	Jemiseye F. O., Ogunwole O. A., Adedeji B. S., Mosuro A. O. and S. O. Olufeko	371-374
	Effects of enzyme cocktails on apparent metabolisable energy content of rice husk in cockerel ration	A. Jimoh <sup>1</sup> and J. O. Atteh <sup>2</sup>	375-378
	Effects of feather clipping and ascorbic acid supplementation on performance and slaughter traits of broilers raised under hot climate	<sup>1</sup> Jimoh, A. A. and <sup>1</sup> Ikeh, C. K.	379-382
	Effects of feeding graded levels of baobab ( <i>Adansonia digitata</i> ) pulp meal on apparent nutrients digestibility of broiler chickens	Lawan, A., Olugbemi, T. S., Duru, S., Onimisi, P.A. <sup>2</sup> and Maidala, A	382-385
	Performance indices of rabbits fed different protein sources	Luka J.S, Omiyale C., Goholshak P. M., Pam B. J, Asiruwa P. O, Adesope A. I, Akwashiki M.A. and	386-389

		Musa M. Y.	
	Effect of fermented African star apple ( <i>Chrysophyllum albidum</i> ) kernel meal on performance of growing rabbits	Makinde, O.J., Aremu, A, Alabi, O.J. , Jiya, E.Z. Aminu, M. <sup>1</sup> and Sikiru, A.B	390-394
	Evaluation Nof proximate and fibre compositions of camel's foot ( <i>Piliostigma reticulatum. dc</i> ) pods in Kebbi State, Nigeria	M.A. Muftau, B. S. Malami, S. A Maigandi and H. A Gwandu	395-398
	Effect Of boiling on proximate composition, mineral and anti-nutritional factors of <i>Cassia tora</i> seeds for poultry feed Production	Assam, E.D. <sup>1</sup> , Ndelekwute, E.K. Demo, K. and Ukachukwu, S.N.	399-402
	Phytogenecology: a novel study for efficient use of phytogenics in monogastric nutrition	Ndelekwute, E.K., Assam, E.D., Umoh, S.U., Elijah, N.A. and Okonkwo, A.C	403-406
	Effect of weight asymmetry on growth indices and cost benefits of growing pigs	C. P. Njoku*, O. A. Fasakin, T. R. Ayano, F. M. Arazi, A. G. Asafa and F. T. Aweda	407-411
	The effect of pineapple ( <i>ananas comosus</i> ) wine sediment on the hematology of weaner pigs	Nkwocha, G.A. , Madubuike, F.N., Ekenyem, B.U., and Ndubisi, C.E	412-415
	Serum biochemical estimates of broiler starter chicks fed Tigernut ( <i>cyperus esculentus</i> ) meal treated with bakery yeast	NKWOCHA, G.A. , ANUKAM K.U. AND EDIH M.O.	416-420
	Growth and haematological responses of broiler finisher birds to diets with graded levels of ginger	Nsa, E.E, Archibong, E.E. and Udoh, E.D.	421-424
	Growth performance, blood profile and cost benefits of finisher broiler chickens fed diets containing sweet potato tuber meal as partial substitute for maize	Odutayo, O.J., Sogunle, O.M., Safiyu, K.K., Olasupo, O.O. and Olaifa, R.O.	425-428
	Bioavailability of selected macro-minerals in blood of crossbred weaned pigs fed cassava starch extract pulp	Ogunbode, A.A and Taiwo, M.M	429-432
	Economics of production of growing cockerels fed mixed saw	Ogungbenro, S. D., Amusa, H. O, Oseni, T. A., Adam, T. O., Bako, B. A and Ogungbenro, B. O	433-436

	dust as a substitute for wheat offal		
	Proximate, amino acid profile and mineral composition of fresh and shade-dried <i>Moringa oleifera</i> leaves grown in Gwagwalada, Abuja.	Agubosi, O. C. P., Ojoh, O. and Oluwafemi, R. A.	437-440
	Effects of replacing maize with threshed rice head supplemented with and without enzyme on the nutrient digestibility of weaner rabbits	Adeniji, A. A, Oluwafemi, R.A and Ojoh, O	441-446
	Performance and cost benefit analysis of starter broilers fed <i>jatropha tanjorensis</i> leaf extracts	Onu, P. N <sup>*</sup> , Nwali, M. N <sup>*</sup> Ajah, C. A. <sup>*</sup> Onu, D.O. <sup>*</sup> , Madubuike, F. N. <sup>**</sup> and Ekenyem, B. U	447-449
	Effects of partial replacement of soyabean meal with cashew nut meal on haematological parameters of weaner rabbits	Oseni, T. A., Amusa, H. O., Ogungbenro, S. D., Amusa, F. L And Azeez, A. A	450-453
	Growth performance and haematological indices of broiler finisher birds fed diets containing <i>saccharomyces cerevisiae</i>	C. O. Osita, A. O. Ani, C. E. Oyeagu <sup>1</sup> , L.C. Ugwuowo, N. E. Ikeh, I. E. Ezemagu, V. C. Udeh <sup>1</sup> , and U. J. Oliobi	454-457
	A smallholder poultry feed app for supplementary feeding: the development, application and utilization	Oyewale <sup>*</sup> , O.A., Ojebiyi, O.O., Adedeji <sup>1</sup> , F.A., Bamidele <sup>1</sup> , O., Sonaiya, E.B	458-461
	Effect of replacing maize with graded levels of sweet potato vine – cassava composite meal (spv-ccm) on performance and economics of production of weaned rabbits	Shaahu, D.T., Tiough, S.M., and <sup>1</sup> Francis, P	462-466
	Growth performance and haematological profile of broiler birds served dietary inclusion of probiotics ( <i>saccharomyces cereviasae</i> ) and enzyme (bio-enzyme)	Udeh, F.U., Ilo, S.U., Onodugo, M.O., Udeh, V.C. and Ugwu, C	467-
	Growth performance of grower rabbits fed diets supplemented with dried citrus ( <i>citrus sinensis</i> L.) pulp as replacement for maize	J O Uguru, O R Obiazi, I O Nwankwo, O B Nwoadu, E P Umoren and E R Onainor , M O Nwabunike And P N Onu	471-474
	Effect of replacing soyabean meal with moringa oleifera leaf meal on	Ugwuowo L. C., <sup>2</sup> Osita C., <sup>3</sup> Olabode A. D. and	475

	haematological and serum biochemistry of finisher broilers	<sup>1</sup> Udeh V.	
	Effect of graded levels of rice milling waste and supplementary enzyme on nutrient intake and apparent retention by finisher broilers	Ogwuegbu, M. C., Ani, A.O.,Edeh, H.O. Osita C.O and Nwagwu J.C	476-480
	Blood profile of young doe rabbits fed diets containing two varieties of composite sweet potato ( <i>ipomoea batatas</i> lam) meal in a palm kernel based diet	I.F. Olaleru, O.A.Abu <sup>2</sup> and C.O. Okereke	481-486
	<b>RUMINANT PRODUCTION, PASTURE MANAGEMENT AND PASTORALISM/RANCHING</b>		
	Responses of biochemical indices of growing turkeys fed grasshopper meal as a substitute for fish meal	Bello, B., Muhammad, B.F., Umar, A.M., Nasir, M. and Bakinruwa, M.B.	487-490
	Haematological parameters and nutrients digestibility of red Sokoto goats fed gmelina and ficus leaves supplement with cassava peels and cowpea husks	Y. E Waba	491-494
	Evaluation of the performance of japa tail ( <i>cortunix cortunix japonica</i> ) fed g. A levels of dried sweet orange peel meal ( <i>sinensis</i> )	Abri A. E., Oluwafemi R.A., Agubosi O.C.P and Enei	495-499
	Apparent nutrient digestibility of broiler starter fed varying levels of processed taro cocoyam ( <i>Colocasia esculenta</i> ) meal based diet.	Ajetunmobi, A.W; Eguaaje, S.A; Adeniji, C.A; Omesa, M.T; Iwegbu, A	500-503
	Feed intake and apparent nutrient digestibility of sorghum ( <i>Sorghum bicolor</i> ) husks and cowpea ( <i>Vigna unguiculata</i> ) haulms by two goats breeds	Baba, M.K., Tsado, D.N <sup>+</sup> , Adama, T.Z <sup>+</sup> , and Alu, S.E	504-508
	Sensory and quality evaluation of Chevron from red Sokoto bucks fed different protein sources	S.B. Abdu, A. Musa, M.R. Hassan, Z.I. Aliyu, Y. Ahmad, A. Mohammed, I.M. Abdullahi and S.J. William	509-512
	Performance evaluation of starter	A.U.C. Ohanaka <sup>1</sup> , C.M. Nwogu <sup>2</sup> , V.M.O. Okoro <sup>1</sup> ,	513-518

	broilers fed palm kernel shell ash as a mineral supplement	E.C. Ogundu <sup>1</sup> and I.C. Okoli <sup>1</sup>	
	Short time cryopreservation of indigenous chicken <i>Gallus gallus domesticus</i> spermatozoa using refrigerator	Wasiu Adekunle Olaniyi and Omowumi Elizabeth sule	519-522
	Performance and haematological indices of <i>Clarias gariepinus</i> fed graded level of crude Ethanolic extract of <i>Gmelina arborea</i> leaf meal diet.	Fatokun, B.O., Osaguona , P.O., Zaccheaus, O.S., Omole E.B ., and Odua, S.O	523-527
	Infertility due to mixed bacterial infection in rabbit does	F. U. Samuel, S.O. Ereke , M. Hussaini, H. N. Kolo , G.O. Fanaiyi, M.D. Salisu, S.D. Olojo	528-531
	Carcass yield of broiler chickens fed diets containing red grape ( <i>Vitis vinifera</i> ) seed and garlic ( <i>Allium sativum</i> ) powder	Sanwo, K. A., A. K. Adelabu., O.A. Adeyemi., O.A. Oso., R.A. Sobayo	532-535
	Performance and Morphostructural characteristics of west African dwarf goats fed diet containing graded levels of alkaline treated malted sorghum sprout	Saka, A. A., Adekunjo, R. K., Adedeji, O. Y. and Jinadu, K. B.	536-538
	Effect of Irish potato peel and yam peel meals on the performance and nutrient digestibility of weaner rabbits	R. Yaqoob, J.J. Omage and Y. Ahmad	539-544
	Response of weaner rabbits fed sugarcane peels meal-based diets supplemented with exogenous enzyme	Ushie, F.T., Oluwafemi, R.A and Alu S.E	545-548
	Nutrigenetic effect of phytase inclusion in diets on egg quality parameters in lohman brown breed of layers	I.O. Suleiman And A.M. Abdulrazak	549-552
	Adulteration of livestock feedstuffs and its economic implications	Adeniji, A. A and Gero, A	553-555
	Adoption of improved feeding technologies among farmers in Iwo Local Government Area of Osun State, Nigeria	Umunna, M.O. And Ibrahim, A.O	556-561
	Nutrient characterization of cassava plant meal	Ogundeji, S. T., Adeyemi, M. A., and Akinfala, E. O.	562-567



	Serum biochemical estimates of broiler starter chicks fed tigernut ( <i>Cyperus esculentus</i> ) meal treated with bakery yeast.	Nkwocha, G.A ., Anukam K.U. and Edih M.O.	568-573
	Developments in marketing channels and systems for smallholder chicken production in Nigeria	Adesina Adelaja, Jibodu Adenola Abanigbe Samuel and *Lai-Solarin Winne	574-576
	Nutritional effects of groundnut haulms on testicular functions and onset of puberty of Kano Brown buck kids	A. M. Hassan, U. Ibrahim, M. Nasir, A. Y. Abdullahi and H. A. Abdulmumin	578-581
	Cadmium, lead and chromium traces in liver, intestine and kidney of Scavenging swine and dogs slaughtered in Wukari metropolis of Taraba state, Nigeria	Obun, C.O., Omotosho, O. B., Ubua J.A. and Tijjani, B. M	582-585
	Effect of dietary supplementation with <i>Monodora myristica</i> on the performance and economics of production of starter broilers	Onu, P. N, Otuma, M.O. , Uguru, J. O. , Aniebo, A. O. Okolo, P. C. Ucheji, C. C. and Obianwuna, U. E.	586-590
	Effect of aqueous turmeric extracts on the performance and economics of production of finisher broilers	Onu, P. N, Otuma, M.O. , Uguru, J. O. , Aniebo, A. O. Okolo, P. C. Ucheji, C. C. and Obianwuna, U. E.	591-595
	Haematological and serum biochemical indices of broilers fed inorganic and chelated trace minerals	Ayoola A.A. <sup>+</sup> , Fafiolu A.O, Oluwatosin O.O, Osinowo O.A, Ariyo O.W	596-599
	The effect of aqueous extract of <i>Lagenaria breviflora</i> (Robert) whole fruit on Egg Lipoprotein profile of Laying Birds	D. A. Ekunseitan, M.A. Adeyemi, T.L. Akiode, L.T., Egbeyale, O.Y. Ayo-Ajasa and Adewole, F.A.	600-602
	Carcass characteristics of rabbits fed different forages as supplement	H. Ibrahim, O. O. Egbewande, M.T. Ibrahim and M. Usman	603-607
	Performance indices of rabbits fed different protein source	Luka J.S, Omiyale C., Goholshak P. M., Pam B. J, Asiruwa P. O, Adesope A. I , Akwashiki M.A. and Musa M. Y	608-611
	Serum biochemical estimates of broiler starter chicks fed tigernut ( <i>Cyperus esculentus</i> ) meal treated with bakery yeast	Nkwocha, G.A ., Anukam K.U. and Edih M.O.	612-616

	Effects of replacing maize with threshed rice head supplemented with and without enzyme on the nutrient digestibility of weaner rabbits	Adeniji, A. A, Oluwafemi, R.A and Ojoh, O.	617-620
	Growth performance and haematological profile of broiler birds served dietary inclusion of probiotics ( <i>Saccharomyces cereviasae</i> ) and enzyme (bio-enzyme)	Udeh, F.U., Ilo, S.U., Onodugo, M.O., Udeh, V.C. and Ugwu, C.	621-626
	Detergent fibre analysis and proximate composition of 12 improved tropical forage legume species in the southern guinea savanna of Nigeria.	Ikani, Josiah Obaka, Okwori, Abel Ibrahim, Ojo, Gabriel Ogala Samuel	627-630
	Effect of meat type and packaging materials on the microbial property of stored dried meat strips	Akinsanya, E.O., Akinola, O.S. <sup>1</sup> , George, J. S.	631-634
	Haematological and serum parameters of west African dwarf sheep fed crop residue based concentrate and unripe plantain peel	Omotoso, S.O., Ajayi, F.T., Ajayi, D.A. and Harry, B.J.	635-639
	Influence of ficus leaf meal based diet on some blood and rumen metabolites of growing bunaji bulls	H.T. Abu, S. B. Abdu, O.S. Lamidi and A. Musa	640-644
	Performance evaluation and cost implication of west African dwarf bucks on five housing patterns	G. D. Eyoh, A. A. Ayuk J. S.Ekpo <sup>1</sup> , I. M. Sam, M. D. Udo U.E Ekpo and U. A. Ukpanah <sup>1</sup>	645-648
	chemical composition and degradability characteristics of signal grass ( <i>Brachiaria decumbens</i> ) hay	Nyako, H.D., A. Mohammed, M. M. Yahya, Adamu B., Yahaya B. and Ardo A. B.	649-652
	Influence of Chicken and Rabbit manure on the Nutritive quality of <i>Lablab pupureus</i> , <i>Mucuna pruriens</i> and <i>Centrosema pascuorum</i>	Omodewu, A. O., Popoola, M. A., Salami S. A., Ashi, S. and Omosehin O.O	653-656
	Growth performance of red Sokoto bucks fed diets containing varying ratios of cowpea ( <i>Vigna unguiculata</i> ) shell and gmelina	Onwusiribe, A.N., Osuhor, C.U., Otaru, S.M. and Gadzama, I.U	657-661

	<i>(Gmelina arborea)</i> leaves		
	Performance and bioeconomics of feeding growing west african dwarf (wad) goats with different copper salts based diets	Okpanachi, U, Nwandu, P.I, Eboh, S and Agu, C. I.	662665
	A review of different methods for mitigating methane gas emission by livestock	VILAWA, G., Ukanwoko, A. I., and Ekine, O.A.	666-
	Profitability analysis of two forage cowpea varieties as influenced by irrigation intervals and phosphorus application rates in Zaria-Nigeria	Bala, A. G., Hassan, M. R., Tanko, R. J., Amodu, J. T., Mohammed, A., Bello, S. S., Ishiaku, Y. M., Mijinyawa, M. A., Bature, M. S and Al-Habib, I. K.	670-673
	Changes in mineral content of <i>Panicum maximum</i> var ntchisi as influenced by poultry manure rate and age at harvest	Dele, P. A., Sarumi, G.O., Adekale, A., Salawu F. E. And Anotaenere, C	674-678
	Effects of stages of growth on dry matter yield and nutrient composition of stylosanthes in the year of establishment in vom, Nigeria	Akpensuen, T.T1., Namo, O.A.T2. and Amodu, J.T3.	679
	Blood profile of West African Dwarf goats fed <i>Zingiber officinale</i> supplemented diet	G A Ibhaze <sup>1</sup> , A H Ekeocha <sup>2</sup> , A N Fajemisin <sup>1</sup> , S O Aro <sup>1</sup> , P O Otun <sup>1</sup>	685-689
	Nutrients profile and post in-vitro parameters for dietary inclusion of <i>delonix regia</i> seed meal for sustainable ruminant animal production	Lamidi, A. A., <sup>1</sup> Wilson, J. I, and <sup>2</sup> Joseph, O. O.	690-693
	Coefficient of preference of <i>panicum maximum</i> and cassava leaves ensiled with different additives by west african dwarf goats	Falola .O.O, Amuda. A.J and Olufayo. O.O	694-698
	Haematological and serum parameters of west African dwarf sheep fed crop residue mixtures and unripe plantain peels	Omotoso, S. O., Ajayi, F. T., Ajayi, D. A. <sup>2</sup> and Harry, B. J.	699-703
	Herbage, grain and leaf dry matter yield of some tropical forage legumes in the southern guinea savanna of Nigeria.	Ikani, Josiah Obaka, Okwori, Abel Ibrahim, Ojo, Gabriel Ogala Samuel	704-709

ANIMAL PRODUCTS AND PROCESSING			
	Evaluation of the quality of some processed meat products: kilishi, beef suya and chicken suya	Edeh, H.O, Ani, A. O, Ogwuegbu, M.C And Asogwa, Q.A.	709-714
	Microbiological analysis of ready-to-eat <i>Balangu</i> meat sold in Hadejia Local Government Area, Jigawa State, Nigeria.	Umar, A.M., Muhammad, B.F., Inusa, S.K., Abdurrahaman, S.L., Saulawa, L. A., Abdullahi, H.I. and Sulaiman, S.L	715-718
	Animal products importation, local industry and economic development – a review of the current trend in Nigeria	Effiong E. and Oluwafemi R. A.	719-723
	Comparative estimation of cholesterol content in the eggs of local breed hen, guinea fowl, quail, duck and dove	M.L. Abubakar and M. Mikailu	724-727
	Carcass characteristics and sensory assessment of FUNNAB alpha broiler chickens fed different protein levels	Olawuyi, D.O., Alabi, O.J. and Jiya, E.Z.	728-732
	Microbial quality of <i>tsire</i> offered for sale at hadejia local government area, jigawa state	Umar, A.M., Muhammad, B.F., αMusa, A., Bello, B., Mati, I.U., Madobi I. S. and Salisu, N	733-736
	Effects of replacing dietary vitamin mineral premix with composite leaf meal on lipid peroxidation of broiler chicken meat during storage	Ogunwole, O. A., A. O. Mosuro and A. O. Solihu	737-740
	Trends and challenges of animal products processing technology in Nigeria	Quadri, U.A and Oluwafemi, R.A	741-744
	Meat products preference among students of Binyaminu Usman Polytechnic Hadejia, Jigawa State	Umar, A.M., Muhammad, B.F., Baba, M., Mohammed, A., Shehu, B. and Junaidu, A.A.	745-751
	Financing small scale Agribusiness in Nigeria; challenges and potentials of animal products processing	Oluwafemi, R.A and Olaitan, D	752-75
	sensory quality of vacuum-packed cured-smoked chicken fillets as influenced by <i>Capsicum annuum</i> extract	Ayobami T. Adeshola and Olubunmi O. Olusola	757-761

	State of infrastructure, technology and animal products processing in Nigeria the missing link	Yakubu, J G and Oluwafemi, R.A	762-766
	Menaces in management practices, processing and transportation of meat in the semi arid of kano metropolis abattoirs	Abdullahi, A.Y., *Zango, M.H., Madaki S., Dambatta, M.A., Muhammad, H. A., ∞ Suleiman, I. O., Bala, A.G., Ghude, M.I., Abubakar A., Muhammad, S.A., Abubakar S.M., Murtala S.K	767-771
	Microbial load and sensory evaluation of broiler breast meat preserved by refrigeration, sundrying and groundnut oil	Emennaa P. E., Sati N. M., Idahor K. O., Gukut R. V., Mbuka J. J., Bature E., Dzikwi-Emennaa, A. A. And Yakubu S.,	772-776
	Microbial quality of <i>tsire</i> meat offered for sale at Hadejia Local Government Area, Jigawa State	Umar, A.M., Muhammad, B.F., Musa, A., Bello, B., Mati, I.U., Madobi, I. S. and Salisu, N	777-781
	Hygienic factors that influence meat quality: a review	Adebayo, O.A., Arogbodo, J.O and Awoniyi, T.A.M	782
	Carcass characteristics and sensory assessment of FUNNAB alpha broiler chickens fed different protein levels	Olawuyi, D.O., Alabi, O.J. and Jiya, E.Z.	787-790
	Assessment of microbial status of cooked pork sold in kasit international pig market, Kaduna State, Nigeria.	Gandi B.R., Joseph S., Makama R.S. and Alphonsus C.	791-797
	Cattle (Sokoto gudali, white fulani and red bororo) shoulder muscles evaluation	Fakolade P. O., Emmanuel O. E. and Aluko O. P.	798
<b>ANIMAL HEALTH AND DISEASES</b>			
	Prevalence of <i>Cystoisospora</i> oocysts infection in local breed of dogs in Enugu State, Nigeria	Eze U.U, Ezech I.O, Ezeudu T.A, Attamah S.C, Eke I. G, Agina O. A, Onyia C.C.	803-806
	The use of gentamicin and detection of its residue in commercial broilers in Nsukka, Southeast, Nigeria.	Ezenduka Ekene Vivienne, Onyeanu Chika Thankgod and Anaga Aruh.	807-810
	Cattle (Sokoto gudali, white fumani and red bororo) shoulder muscles evaluation.	Fakolade P. O., Emmanuel O. E. and Aluko O. P.	811-815
	Effect of methanolic stem bark extract of <i>Azadihiracta indica</i> on morbidity and mortality of chickens experimentally infected with velogenic newcastle disease virus (kudu 113)	Okoroafor, O.N.,Ezema W. S.Omoronuwa, A.O. and Ngene A.A, Ani. A.O, Okosi, R.I	816819

	Prevalence of tick infestation on the one - humped camels ( <i>Camelus dromedarius</i> ) in semi- arid region of Sokoto State, Nigeria	M, Abdullahi; A. K, Mohammed, and O. O, Okubanjo	820-824
	Vaccination in livestock production: a veritable tool in the campaign for food security in Nigeria. a review.	Oluwole O.R. Efunwoye O.O. Adeeko A.	825-829
	Dystocia: a menace to ruminant procutivity - a review.	Omotoso, O.B., Adebayo, O.A., Arogbodo, J.O and Chitura, T.	830-832
	Cutaneous papillomatosis in west African dwarf goats and its economic importance: case report.	Davinson C. Anyogu	833-838
	Disease management practices of broiler farmers in Owerri West Local Government area, Imo State.	Kadurumba, O.E., Ugwu, A.E., Agu, C.I. and Ikpamezie, L.C.	839-843
	Immune response of chicks to infectious bursal disease virus booster vaccination.	Animoke, P. C., Ezeibe, M. C. O., Eze, J.I., Ngene, A. A. and Okoroafor, O. N., Aba, P. E	844-846
	Histomorphology of spleen of rats sub- acutely administered with <i>Averrhoa Carambola</i> juice extract	P.E Aba, A.U Amadi J.A Onah	847-851
	Effects of methanolic leaf extract of <i>Pterocarpus Santalinoides</i> dc on blood oxidative stress and anti-oxidant parameters of albino rats given toxic doses of carbon tetrachloride.	T. E. Ihedioha, Isaac U. Asuzu, Aruh O. Anaga, and J. I. Ihedioha	852-857
	Erythrocyte and leucocyte responses of goats administered melatonin to diminazene aceturate-induced toxicity	V. O. Sinkalu, J. O. Ayo, S. N. A. Sa'idu, T. Dzenda and L. S. Yaqub	858-862
	Effect of Biochemical Constituents of <i>Detarium senegalensis</i> root (tallow tree) and <i>Eucalyptus camaldulensis</i> leaf (river red gum) mixed Methanolic Extracts on <i>Trypanosome Brucei-brucei</i> using Mice Model	Ibrahim Maina Hassan and Bashir Saidu	863-867
	Helminth fauna of the five phenotypes of the Nigerian local chicken in Nsukka, Enugu State,	Nzeakor, T.A., Idika, I.K. , Chah, K.F., Nwosu, C.O.	868-872

	Nigeria.		
	Prevalence and hematological parameters of bovine trypanosomosis in Aguata and Orumba South Local Government Areas of Anambra State	C.F. Obi, M.C. Akata, O.J. Ezubelu, C.U. Uneze	873-877
	Scepticaemic coliforms in broiler chickens administered extracts of mango ( <i>Magnifera Indica</i> ) and neem ( <i>Azadirachta Indica</i> ) bark obtained by different methods	A.A. Ayoola, L.T. Egbeyale, D. A. Ekunseitan and O. B. Olatunbosun	878-882
	Livestock vaccination: a veritable tool in the campaign for food security in nigeria- a review.	Oluwole O.R. +Efunwoye O.O. and Adeeko A	883-886
<b>MICROLIVESTOCK PRODUCTION, NUTRITION AND MANAGEMENT</b>			
	Performance of growing coturnix quails ( <i>Coturnix Japonica</i> ) fed enzyme supplemented rice offal diets	J.A. Edache, C.D. Tuleun, A.G. Yisa, U.R. Muduudtai, D.O. Edache, Gobwir, S. and Dien, R.T.	887-891
	Performance of rats fed processed matured and immatured nypa palm ( <i>Nypa Fruiticans</i> ) fruit nut meal	Ukam, V. E., Agwunobi, L. N. and Oko, O. O. K.	892-896
	Response of japanese quails ( <i>Coturnix Japonica</i> ) fed diets containing varying levels of sweet potato peel ( <i>Ipomoea Batatas</i> ) meal	Agbai, K. N, Omage, J.J. and Bawa, G.S.	897-901
	Performance of weaner rabbits fed ensiled cassava peel, bovine blood and rumen content mixtures	Ikeh n. E, nnajiofor N.W, Ezekwe A.G, Ereke S.O	902-907
	Performance and cost benefits of snails ( <i>Archachatina Marginata</i> ) fed diets containing noodle waste as replacement for	Popoola, Y.A, Onuoha, C.H., Fayenuwo, J.O., Owosibo, O.T., Olotu, M. and Omole, A.J.	908-912

	maize		
	Growth performance and meat qualities of weaner rabbits fed graded levels of boiled negro coffee ( <i>Senna Occidentalis</i> ) seed meal.	A. O. Suleiman, Y. S. Kudu and M. J. Ibrahim	913-917
	<i>Moringa Oleifera</i> : a multipurpose browse plant for feeding rabbits	K. E. Akande	918-920
	Haemolymph mineral composition of two species of land snail fed with <i>Moringa Oleifera</i> leaf meal.	Amobi, M.I., Anazodo, A.N., Okereke, H.N., Okpoko, V.O., Nwobi O.C. and Nwobi, G.L	921-926
<b>AQUACULTURE, FISH PRODUCTION AND WILDLIFE MANAGEMENT</b>			
	Evaluation of traditional and modified malian traps in Tagwai dam of Niger State	J. Yusuf, S.L. Lamai and U.P. Yakubu	926-929
	effect of heat-treated soybean meal on growth performance and nutrient utilisation of African catfish ( <i>Clarias gariepinus</i> ) fingerlings	Adewole, A.M., Alimi L. F. and Ikeh, S.E	930-934
	Dietary administration of Malabar spinach ( <i>Basella alba</i> ) leaves extracts on growth performance, survival and condition factor of juveniles <i>clarias gariepinus</i>	Olusola, Sunday Emmanuel and Abbah, Jude Obagwu	935-938
	Awareness and adoption of improved fish processing technologies among fish farmers in obio/akpor local government area of rivers state	Ogunremi, J.B., Olanakanmi, J.B., Abdulahi, D.K. and Enyindah, C.C	939-942
	Comparative floatability rate of extruded and on-farm floating feeds	Olagunju, S.B., Orire, A.M. and Sadiku, S.O.E	943-946
	Haematology and histopathology of <i>Clarias</i>	Folorunso, L.A, <sup>b</sup> Falaye, A.E, <sup>b</sup> Ajani E.K and <sup>b</sup> Emikpe, B.O	947-950



	<i>gari</i> epinus fed <i>aspergillus brasiliensis</i> fermented palm kernel sludge in replacement of maize		
	Growth performance and nutrient digestibility of weaner rabbits ( <i>Oryctolagus cuniculus</i> ) fed diets containing varying levels of cowpea ( <i>Vign</i>	A. A. Malik M. Abdullahi, Y. S. Kudu And M. J. Ibrahim	951
	Determinants of artisans' households beef consumption expenditure in new Bussa, Niger State	ADEBAYO, O. A. and UMUNNA, M. O.	956-960
<b>LIVESTOCK ECONOMICS, EXTENSION AND RURAL SOCIOLOGY</b>			
	Traditional methods of pregnancy detection in ewe at Hadejia Local Government Area, Jigawa State	Umar, A.M., Muhammad, B.F., Mohammed, A., Muhammad, Y., Kazaure, L.A., Tamburawa, M.S. and Madigawa, I.L.	961-965
	Climate change adaptation strategies among small ruminants farmers in Borgu Local Government Area of Niger state, Nigeria	M.O. Umunna and O.A. Adebayo	966-970
	Sheep and goat farming in imo state south east Nigeria a traditional vocation at the verge of extinction?	N.J Anyanwu J.O. Ogualu , V.U. Odoemelum , G.A. Kalio and I.I. Ekpe	971-975
	Adoption of improved feeding technologies among farmers in Iwo Local Government area of Osun State, Nigeri	Umunna, M.O. and Ibrahim, A.O.	976-981
	socio-economic analysis of smallholder pig production in Sabon Gari Local Government area, Kaduna State, Nigeria	Ezeh C.C. and Michael E.O.	982-987
	Field of interest: animal welfare and behavior/climate change.	P.L. Komolafe, O.J. Babayemi, K.A. Thomas. E.O. Ewuola	988-992

	population dynamics of cattle slaughtered in a transient slab of the international cattle market Ibadan, Nigeria		
--	--	--	--