

THE IMPACT OF ON-FARM FEED MIXING PRACTICES ON INTENSIVE CHICKEN FARMING IN KAWEMPE DIVISION, KAMPALA



BY

LUTWAMA ABDULHAKIM

BU/UG/2011/172

1000hakim@gmail.com

A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF REQUIREMENT FOR AWARD OF A BACHALOR DEGREE IN ANIMAL PRODUCTION AND MANAGEMENT OF BUSITEMA UNIVERSITY

JUNE 2014

DECLARATION

I LUTWAMA ABDULHAKIM declare that this report has never been submitted to any other university for award of any degree

Signature Date 25/07/2014

CLASS NO.1.
ACCESS NO.1.
ACCESS

APPROVAL

This dissertation has been submitted with approval	of Academic supervisor of Busitema
University.	

Dr.Oluge Christopher

BVM, M.A. Educ. Mgt, Cert in Advanced studies in protozoan diseases.

Department of Animal Production and Management,

Busitema University Arapai Campus

Signature Chistophros.	Date 25. 07.2014

DEDICATION

This dissertation is dedicated to all those who have and are still putting hands in mentoring me. Without you I would not have been able to reach this level. May Allah the Almighty bless your hands abundantly.

ACKNOWLEGMENT

My profound and special sincere thanks and appreciations go to my highly esteemed Academic supervisor, Dr. Oluge Christopher, who efficiently guided me throughout the Dissertation work. He has invested his precious time, energy and scientific ideas and knowledge in the various stages of my work; proposal development, data collection in Kawempe division and write-up of this dissertation. His keen interest in the subject, unreserved support, encouragement and patience has positively and significantly impacted on the completion of my study and this dissertation.

I extend my profound sincere thanks to Dr. Kabanda, for his motivation, daily guidance and supervision, excellent suggestions and comments in the course of data collection.

I also extend my sincere thanks and appreciation to the staff of Busitema University Arapai campus, for there encouragement and field supervision.

My guardian Engineer Kirungi Sulaiman, Engineer Nandawula Rebecca am so grateful for their financial support and mentoring you rendered to me may Allah award you constantly.

Lastly am very grate full to all my classmates for team work and encouragement.

TABLE OF CONTENT

DECLA	ARATION	i
APPRO	DVAL	iii
DEDIC	CATION	iv
ACKNO	OWLEGMENT	ν
TABLE	E OF CONTENT	vi
LIST O	OF TABLES	ix
СНАРТ	TER ONE: INTRODUCTION	2
1.0.	Introduction	2
1.2.	Problem statement	3
1.3.	General objective	4
1.4.	Specific objectives	4
1.5.	Research questions	4
1.6.	Significance of Research	,.4
1.7.	Justification	4
СНАРТ	TER TWO: LITERATURE REVIEW	,6
2.0.	Feeds and feeding challenges	6
2.2.	Feed Formulation	6
2.3.	Feed Storage	7
2.4.	Broilers and layers nutrition	7
2.5.	Intensive system	9
2.6 F	Feed Resources	10
СНАРТ	TER THREE: MATERIALS AND METHODS	11
3.1.	Research design	11
3.2: 7	Area of study	11

3.3.0. Sampling technique	ĺ
3.4. Operational procedure12	2
3.5. Observational procedure	2
3.6. Data analysis	2
3.5. Data presentation	2
CHAPTER FOUR: PRESENTATION OF RESULTS1	3
4.1. Number of birds	3
I.	3
4.2. Type of Chicken kept	4
4.3. The Common ingredients used by poultry farmers to make on farm mixed feeds	5.
4.4. Sources of the ingredients for on farm mixed feeds in Kawempe division	5
4.5. Frequency of processing feeds	6
4.6. Frequency or times of mixing on farm mixed feeds	7
4.7.Costs of the ingredients on farm mixed feeds	7
4.9.Transport cost	8
4.10. Mobilization of ingredients	8
4.11. Easy of storage	9
4.12. Spoilage of feeds	9
4.13. Accessibility of ingredients	0
CHAPTER FIVE: DISCUSSION	1
CHAPTER SIX: CONCLUSION AND RECOMMENDATION	5
6.0. Conclusion	5
6.1. Recommendations	5
REFERENCES	6
A DDFN IDIN	

Questionnaire	31
ASKETCH MAP OF KAWEMPE DIVISION SHOWING AREAS OF STUDY	34

LIST OF TABLES

Table 1: Costs of the ingredients for making on farm mixed feeds
Table 2 : Showing the ease of storage of feeds
Table 3 :Showing whether poultry farmers get all ingredients they want for on farm mixed feeds
LIST OF FIGURE
Figure 1 Number of birds kept by poultry farmers in Kawempe division
Figure 2 : The type of chicken kept by poultry farmers in K awempe division14
Figure 3 : The common ingredients used by poultry farmers to make on farm mixed feeds15
Figure 4: The source of ingredients used by poultry farmers in Kawempe division to make on
farm mixed feeds
Figure 5: Frequencies of processing on farm mixed feeds in kawempe division
Figure 6: The frequency of mixing poultry on farm mixed in a week
Figure 7 Transport on farm mixed feeds
Figure 8: How easy to mobilize ingredients for making on farm mixed feeds
Figure 9: The frequency spoilage of feeds20
Figure 10: one of poultry farmers in kawempe division practicing on farm mixed feeds35

LIST OF ABBREVIATIONS

FAO Food Agriculture organisation

GDP Gross Domestic Product

AGDP Agriculture Gross domestic product

MT Metric ton

Kg Kilogram

Etc Etcetera

KCALME_nKg⁻¹ kilo calories metabolisable energy per kilogram

ABSTRACT

The study was conducted in Kawempe division, Kampala District and it focused on intensive chicken farmers performing on farm mixing practices. The general objective focused to determine the impact of on-farm feed mixing on intensive chicken farming in Kawempe Division. The specific objectives were to establish common on-farm feed resources used by poultry farmers to make rations, to assess the cost effectiveness of on-farm mixed feed on intensive chicken farming and to determine on-farm feed mixing challenges faced by poultry farmers in Kawempe division.

A semi-structured questionnaire was administered to farmers after a pre tested and the adjustments were made. The farmers sampled were purposively selected. Data was collected from farmers in wards where on- farm feed mixing was being practiced.

Major findings were 36% of farmers s contacted used maize bran, 9% maize bran and fish meal, Sunflower 5.3%, 8%cotton seed cake, 6.7Rice bran and others 17.3

60% of the ingredients (cotton seedcake, maize bran, Rice bran, and others) were obtained from retailers, 22.7% from Grinding mills while as 15% whole sale, 1.3% others, and 1% from factory. 58.7% respondents said that ingredients were expensive followed by moderately expensive (25.3%), very expensive (12%) and 4% revealed that the ingredients were not expensive. 66% respondents revealed that the spoilage of the feeds was less frequent as compared to 17%, not at all 8%, and 9% who said that the feeds get spoilt frequently, not at all and very frequently respectively, Poultry farmers in Kawempe division processed there feeds to have control of the nutritional quality of their rations for intensive chicken farming and during the study period, 60 % of respondents contacted process their feeds very often, 28% often and 9% not at all.

If on farm feed mixing to be put on benefit, great effort is required to produce well-balanced on farm mixed ration. The use of locally available feed resources should be considered a high priority thus reducing the costs of purchasing the ingredients and increasing the profitability of the enterprise.

CHAPTER ONE: INTRODUCTION

1.0. Introduction

The world population of poultry was estimated at 16.2 billion, 71.6 % occur in developing countries. It was also estimated that in Uganda there are has only 1068 million households and around 80-90% are involved in poultry keeping (Kitalyi, 1998)and (Gueye, 1998). In Uganda, Livestock production, is one component of agriculture and it contributes 17% of Gross Domestic 9% Product (GDP), representing about of total Gross Domestic Product (Byarugaba, 2007, Busuulwa, 2009). Uganda produces 67, 718,544 metric tons of chicken meat and 57,861,747 Metric tons of hen eggs (Guèye, 2005). 70% of the poultry products are from village and this has ensured a 20% animal protein intake (kitalyi., 1998) The high percentage of households keeping poultry have ensured demand for commercial and on farm mixed feeds. In Uganda,70% small-scale feed mills are totally not mechanized but it is assumed to be major issue for commercial poultry producers (Omiti&Okute, 2010). This indicates that all farmers cannot afford commercial poultry production and around 60-70% costs spent only on feeds forcing most farmers to buy ingredients and mix them personally. Poultry production is categorized into commercial and free-range but the only difference exists mainly in terms of number, kinds of birds, bio-security and management practice also intensive, semi-intensive and extensive system of poultry production which is based on specialized breeds and constitutes less than 20% of the total poultry and is mainly found in urban areas like Kawempe division, where there is constant market for eggs and chicken meat (Gueye, 2000, Alemu., 2003; Gausi, et al., 2004) that give hope for of on farm mixed feed. In Uganda the poultry farmers use compounded and homemade feed from oil seeds cakes variety, soybean, groundnut, Sunflower and cotton seedcake. In Kampala city and Kawempe Division inclusive poultry farming is now legalized and formal as 70% of eggs eaten from the city ensuring need and market for animal feeds (Kimeze, 2005) constantly in Kampala.

REFERENCES

Achoja, O.F. (2013): A locative efficiency of feeds among poultry farmers in delta state, Nigeria Russian journal of agricultural and socio-economic science, 2(14).

Ampofo.S.D.(2013):Modelling the feed mix for poultry production (The case of adama Musa farms, Dormaa-Ahenkro in the Brong Ahafo Region of Ghana) Kwame Nkrumah University of Science and Technology, Kumasi.

Animal production society of Kenya, (2011): Driving livestock entrepreneurship towards attainment of food sufficiency and Kenya vision 2030. Nomad Palace Hotel, Garissa, Kenya

Asifand Siegfried. (2013): Impact of Corruption on Farm Production and Profit, Russian Journal of Agricultural and Socio-Economic Sciences, Pages 3-14, ISSN 2226-1184.

Amerah, A.M., Ravindran V., Lentle R.G and Thomas, D.G (2007): Feed particle size: Implications on the digestion and performance of poultry world's poultry science journal. Vol 63, September 2007. DOI: 10.1017/S0043933907001560.

Atunbi, O.A. and Sonaiya, E.B. (1994). An assessment of backyard poultry housing in Osogbo. Osun State, Nigeria. African Network for Rural Development Newsletter, 4(1): 7

Bell, J.G., Kane, M. and Le Jan, J. (1990): An investigation of the disease status of village poultry in Mauritania. Journal of Preventive Veterinary Medicine 8: 291-294.

Bourzat, D. and Saunders, M. (1990). Improvement of traditional methods of poultry production in Burkina Faso. In Proceedings, CTA Seminar; 3rd International Symposium on Poultry Production in Hot Climates, Hameln, Germany, 12 June 1987

Byarugaba, D.K and Matovu, F. (2011): Uganda poultry trade flows and value chain analysis. Food and Agriculture Organisation of the United Nations FAO ECTAD Nairobi.

Byarugaba, K.D. (2007): Poultry country sector review Uganda; Food and agricultural organisation of united Nations 2008.

Calet, C. (1965): The relative value of pellets versus mash and grain in poultry nutrition. World poultry science Journal 21:23-52.

Cobb-VantressInc, (2009): Management Guide Page 12, L-102003, Email: info@cobb.vantress.com.

Dolores, M.A and Tongeo, C (2007): Purposive Sampling as a Tool for Informant Selection. Ethno botany Research & Applications 5:147-158 available on line at http://hdl.handle.net/10125/227

Douglas, J.H., Sullivan, T.W., Bond, P.L. Struwe, F.J., Bailer J.G. and Robeson, L.G. (1990):Influence of grinding rolling, and pelleting on the nutritional-value of grain sorghum and yellow com for broilers. Poultry science 69:2150-2156.

Fanatico., (1998): feeding chickens ATTRA-National Sustainable Agricultural information service, page 5.

FAO, (2004): Animal feed resources, Feedipedia.

FAO, (2009): Poultry Genetics Resources and Small Poultry Production Systems in Uganda AHBL-promoting strategies for prevention and control of HPAI. Rome.

Glatz, P.C (2010). Sustainable Small-Scale Poultry Production: Are Local Feeds a Viable Option for the Pacific Region? Publication Code: FR2009-21, ISBN: 978 1 921615 07 8 Australian Centre for International Agricultural Research. Canberra, ACT, Australia.

Guèye, É.(2003a): Gender issues in family poultry production systems in low-income food-deficit countries. American Journal of Alternative Agriculture Vol. 18 (4): 185-195

Guèye, E. F. (2003b): "Poverty alleviation, food security and the well-being of the human population through family poultry in low-income food-deficit countries" Food, Agriculture and Environment 1(2): 12-21.

Gueye, E. F. (2005): Gender aspects in family poultry management systems in developing Countries. In: XXII World's Poultry Congress, 8 – 13 Jan 2004, Istanbul (Turkey). World's Poultry Science Journal, 61:39 – 46.

Gura, S., (2008): Industrial livestock production and its impact on smallholders in developing countries. Consultancy Report to the League for Pastoral Peoples and Endogenous Livestock Development: Germany, pp. 65.

http://www.pastoralpeoples.org/docs/gura ind livestock prod.pdf.

Hafeni, S., Mpofu, I.D.T and Petrus, P. (2013): The potential of pearl millet and water melon seeds as cheap alternative ingredients in Namibian poultry feeds. Agricultural Science Research Journal 3(5); pp. 140- 143, May 2013. ISSN-L: 2026 – 6073 ©2013 International Research Journals. Available at http://www.resjournals.com/ARJ

Heinz, J., Warmia and Mazury, (2011): Recommendations for energy and nutrients of layers: acritical review. Lohmann information vol. 46 (2), p61University Olsztyn, Poland

Hendy, C.R.C., U. Kleih., R. Crawshaw and M. Phillips., (1995): Livestock and the environment finding a balance: (Interactions between livestock production systems and the environment impact domain) concentrate feed demand. Natural Resources Institute, UK. Pages: 141.

Jensen, I. S., (2000): Influence of pelleting on the nutritional needs of poultry. Asian -Austrasian Journal of animal science 13:35-46.

Kasule, L., Katongole, C., Kasozi, J.N., Lumu, R., Bareeba, F., Magdalena, P., Ivarssonand linderg. JE., (2014): Low nutritive quality of own-mixed chicken rations in Kampala city, Uganda, Journal of Agronomy for sustainable Development DOI 10.1007/s13593-013-0205-2 ISSN 1774-0746and 1773-0155.

Katongole C.B., Kasozi, J.N., Lumu, R., Bareeba, F., Maggalena, P., Ivarsson, E., Lindberg, JE (2012): Strategies for coping with feed scarcity among urban and Peri-urban livestock farmers in Kampala, Uganda Journal of Agriculture and Rural Development in the Tropics and Subtropics Vol. 113 No. 2) 165–174ISSN: 1612-9830 – journal online: www.jarts.info.

Kleih, Ulrich, Bala Ravi, S., Dayakar Rao, B., and Yoganand, B. 2000. Industrial utilization of sorghum in India. Working Paper Series no. 4. Patancheru 502 324, Andhra Pradesh, India:

International Crops Research Institute for the Semi-Arid Tropics . pp 44.

Kimeze N.S, (2005): Farming in the city, An Annotated Bibliography of Urban and Peri –urban Agriculture in Uganda, P2An Assessment of Urban and Peri-Urban agriculture. I SBN92-9060-263-5.Lima, peru

Kitalyi, A.J. (1998): Village Chicken Production Systems in rural Africa, Household food security and gender issue. FAO Animal Production and Health Paper No. 142. Food and Agricultural Organization of the United Nations, Rome, Italy, Pp. 81.

Lott, B.D., Day, E.J., Deaton, J.W. and May, J.D. (1992): The effect of temperature, dietary energy level and corn particle size on broiler performance. Poultry Science 71:618-624.

MAAIF/UBOS (2009).Ministry of Agriculture Animal Industry and Fisheries (MAAIF) and Uganda Bureau of Statistics (UBOS).Livestock Census Report.MAAIF and UBOS Kampala, Uganda

Maddala, G. S. (1993) Estimation of limited Dependent Variable Models under Rational Expectation. In Maddala, G.S. C.R. Rao, and H.D. Vinod (Eds). Econometrics .North –Holland, Amsterdam.

Mbugua, N.P. (1990): Rural Smallholder poultry production in Kenya. In proceedings, CTA Seminar on Small holder Rural poultry production, Thessaloniki, Greece, 9-13 October, 1990. Vol. 2, pp. 119-131.

Mbugua, N.P, (1990): Rural smallholder poultry production in Kenya. In Proceedings, CTA Mekonnen .G. Teketel and Anteneh A. (1991). The Ethiopian Livestock Industry . Retrospect and Research, Addis Ababa, Ethiopia .

Mekonnen, G, (2007): Characterisation of Smallholder poultry production and Marketing system of Dale, Wonsho and Lokaabayaweedas of southern Ethiopia Msc. Thesis presented to the School of Graduate Studies of Hawassa University.

Mengesha M. (2012): The Issue of Feed-Food Competition and Chicken Production for the Demands of Foods of Animal Origin. Asian Journal of Poultry Science, 6: 31-43.DOI:10.3923/ajpsaj.2012.31.43.

Oladokun, V.O. and Johnson (2012): Feed formulation problem in Nigeria poultry farms; a matchematical programming approach. American journal of scientific and industrial research, ISSN: 2153-649X doi:10.5251/ajsir.2012.3.1.14.20 Available on line athttp://www.scihub.org/AJSIR

Omiti Jand Okute .S, (2010): An Overview of the Poultry Sector and Status of Highly Paper No.4

Pathak, P.K. and Nath, B.G. (2013).Rural poultry farming with improved breed of backyard chicken. J. World's Poult, Res. 3(1): 24-27. Available on line at http://jwpr.science-line.com/ Ravindran, V. and Blair, R. (1991). Feed resources for poultry production in Asia and the Pacific. I. Energy sources. World's Poultry Science Journal 47; 213-231.

Ravindran, V. and Blair, R. (1992). Feed resources for poultry production in Asia and the Pacific. II. Plant protein sources. World's Poultry Science Journal 48: 205-231.

Rayindran, V. and Blair, R. (1993). Feed resources for poultry production in Asia and the Pacific. III. Animal protein sources. World's Poultry Science Journal 49: 219-235.

Safalaoh .A.C.L and Chapotera .J.(2007); A preliminary evaluation of the stock feed industry in Malawi journal of Agricultural sciences 3(1).

Teeter, R and Wiernusz, C. (2003): Broiler Nutrition Guide page 20-29, Cobb-VANTRESSINC, CB 239/2/2, Email: info@cobb-vantress.com.

Wasake, D. (2011).: Investing in Poultry Farming in Uganda. Http://Ezine Articles.com/?expert = Dickson Wasake.