BUSITEMA UNIVERSITY
Pursuing Excellence

CONSTRAINTS TO HONEY PRODUCTION IN ARAPAI SUB-COUNTY SOROTI DISTRICT

BY

KIMBUGWE GODFREY
BU/UG/2011/246

A RESEARCH DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND ANIMAL SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR AWARD OF THE DEGREE OF BACHELOR OF ANIMAL PRODUCTION AND MANAGEMENT OF BUSITEMA UNIVERSITY

JUNE. 2014

DECLARATION

I **KIMBUGWE GODFREY**, hereby declare that this dissertation is out of my original concept and has never been submitted to any University or institute of higher learning for any academic qualification.

Signature: ..... Date: 30/07/2014

This dissertation has been submitted for examination with the approval of my supervisor:

Mr. Mbogua Joseph

Lecturer, Department of Animal Production and Management

Busitema University

Signature..... Date: 30/07/2014

DEDICATION

I dedicate this piece of work to my parents, for their sacrifices and commitment to keep me in school till this far and their parental guidance accorded to me will ever remain a memorable contribution to my life.

ACKNOWLEDGEMENT

I take this opportunity to utter my gratitude to the Almighty God for the gift of life all through.

I also acknowledge the tireless work done by, Mr. Mbogua Joseph, Mr. Kauta Moses, Mr. Olupot Julius, and Ms Akulo Jolly etc in order for me to complete this report, I extend my appreciation to my beloved lecturers for the knowledge rendered, all my friends and colleagues who were always there for me in case of any help.

Table of content

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

MT	Metric Tones
EU	European Union
USA	United States of America
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
UNDP	United Nations development program me
UEPB	Uganda Export Promotion Board
NRMP	National Residue Monitoring Plan
THR	Teso Honey Refinery
TUNADO	The Uganda National Apiculture Development Organization
SOCCADIDO	Soroti Catholic Diocese Development Organization
ITC	International Trade Center
BBW	Banana Bacterial Wilt
Pa	per annum
UBOS	Uganda Beaural Of Statistics
AFB	American Foul Brood
EFB	European Foul Brood

ABSTRACT

This study was conducted in Arapai Sub County Soroti district to find out the constraints to honey production. The objective was to determine the constraints to honey production. Therefore, 80 respondents were randomly selected and interviewed using a questionnaire which was pretested before the commencement of data collection. The data collected was analyzed using statistical package of social scientists (SPSS version 16) to find the frequencies and percentages which are presented using tables, graphs and pie charts.

The study revealed that 80% of the respondents were married and this provided the family labor. More than 60% had attained at least a secondary level of education. 76.2% kept the bees for home consumption and generation of income and the majority (62.5%) used traditional bee hives made out of tree logs. The study reveals that majority of the farmers in the study area (87.5%) have less than 10 bee hives on average. Most farmers experiences disease outbreaks (American fowl brood) and pests Varroa mites and ants. It was also noted that majority of the bee farmers (95%) don't have harvesting equipments such as smoker, gears etc, which reduced the quality of the honey.

In conclusion therefore, the main constraints to honey production are; lack of experience, poor bee hives management, pests and diseases, lack of capital to buy modern bee hives, lack of equipments for harvesting and processing honey, etc. From the results, it can be recommended that; the farmers should establish a close linkages with the various service providers who provide services such as training, equipments such as smokers, gears etc and marketing information and linkages.

Beekeepers should also form associations and organized into cooperative societies at the local, and regional and national levels. This will enable them to access services e.g. training and extension services and enhance collective marketing through which they can negotiate for better prices.

CHAPTER ONE: INTRODUCTION

1.0 Background

Apiculture (bee-keeping) is the deliberate rearing of honey bees (*Apis mellifera*) for honey production of honey and other products. Apiculture is one of the fastest growing sectors worldwide. A number of countries have made strategic moves towards the development of this industry. Recent developments show a shift from keeping bees as a hobby to one of a serious Business enterprise. In Northern Ireland, for example, mostly old and retired men practiced beekeeping. To-date Ireland produces one of the best honeys in the world. (UEPB.2005)

According to UBOS, (2008) the estimated total production of honey in Uganda in the six months prior to the census was 1.3 million kilogrammes. This translates to an estimated total of 2600 metric tones of honey per annum. In terms of region; Northern region had the highest production of honey estimated to be 0.64 million kilogrammes; while Central region had the least production of honey estimated to be 0.085 million kilogrammes. In terms of district; the districts with the highest production of honey in Uganda in terms of kilogrammes were: Yumbe (129,950), Nakapiripirit (87,920), Pader (81,320), Moroto (70,560), Amuru (57,080), Oyam (47,840), Nyadri (43,950), Nebbi (42,620), Apac (40,590), and Lira (40,480),Uganda has a very high potential for honey production. However, it has not been fully exploited in Teso region and areas of West Nile. (Prof. Moustafa.2004).

According to the Ministry of Agriculture, Animal Industry and Fisheries (2008); about 1.2 million beekeepers are active, with 700,000 beehives colonized countrywide. Many of the beekeepers lack the necessary skills for effective production of honey and do not have resources to acquire better equipment. In spite of this, sizeable quantities of honey are produced in the districts of Bushenyi, Soroti, Gulu, Nakasongola, Kabarole and the West Nile region (James, 2008)

Beekeeping offers a safety net for the poor against poverty, and can generate income. Beekeeping is a low risk, sustainable, household-level enterprise. The opportunity to earn more from beekeeping is growing as the demand for honey in the towns of Uganda outstrips supply. The challenge is to transform subsistence beekeeping to business apiary value chain, and it is clear that this effective demand is the key driver to this process (TUNADO.2010).

Beekeeping is one way of improving the cash income to farmers, provide additional food, provide employment, pollinate crops as they produce honey, beeswax and other hive products which can bring foreign currency into the country (Kerealem E.et al;2009)

REFERENCES

Robert's, Victoria, Sarah. A, Jacob.G, Donald.R, Kugonza, Twine.R (2009), The Uganda National Apiculture Development Organization (TUNADO), P.O Box 5318 Kampala, National Livestock Resources Research Institute (NaLIRRI), P.O. Box 96, Tororo, Uganda.

Tessega Belieh (2009). Honeybee Production and Marketing Systems, Constraints and Opportunities in Burie District of Amhara Region, Ethiopia M.Sc. Thesis, Bahir Dar Universit

Keralem Ejjgu, (2005). Honey bee production system, opportunities and challenges inEnebse Sar Midir Woreda (Amhara Region) and Amaro Special Wereda (Southern Nations, Nationalities and peoples Region), Ethiopia. M.Sc. thesis presented to Alemaya University

Adebabay kebede, Keralem ejigu, Tessema Aynalem, Abebe Jenberie, 2008. Beekeeping in the Amhara region, Amhara Regional Agricultural Institute, Ethiopia

Gichora. M.,2003. Towards Realization of kenya's Full Beekeeping potential: A Case Study of Baringo district. Ecology and Development series No.6, 2003. Cuvillier Verlag Gottingen, Gottingen, Germany.

Mutsaers, M.,(1993) Honey bee husbandry in Nigeria Traditional and Modern Practices. The Nigerian Field.

Thomas, C. (June 2006) Abeginner's Guide to beekeeping in Kenya. Nakuru, www.apiconsult.com.

Okiria, J, (2007) Beekeeping for the restoration of Degraded Ecosystems and improving livelihoods in

Byham, A., (2007). Standard Operating Procedure no. NBU/75: *Routine Inspection of honey bee colonies for foul brood disease.* National Bee Unit Publication, CSL (Defra), UK.

Cannon, R.M., Roe, R.T., (1982). *Livestock disease surveys: a field manual for veterinarians /R.M. Cannon and R.T. Roe* Australian Bureau of Animal Health. Epidemiology Branch.A.G.P.S. Canberra.

Chantawannakul, P., Ward, L., Boonham, N., Brown, M.A.,(2006). Scientific note on the detection of honeybee viruses using real-time PCR (TaqMan) in *Varroa* mites collected from a Thai honeybee (*Apis mellifera*) apiary. J. Invertebr. Pathol. 91, 69–73.

Patrick, O, Muhwezi,B, et al;(2008). Uganda Beaural Of Statistics (UBOS)

Chen, Y., Zhao, Y., Hammond, J., Hsu, H.T., Evans, J., Feldlaufer, M., 2004. Multiple virus infections in the honey bee and genome divergence of honey bee viruses. J. Invertebr. Pathol. 87, 84–93.

Chen, Y., Evans, J., Feldlaufer, M, (2006). Horizontal and vertical transmission of viruses in the honey bee, *Apis mellifera* J. Invertebr. Pathol. 92, 152–159.

Cunningham, A. B., (1996). People, park and plant use: Recommendations for multiple-use zones and development alternatives around Bwindi Impenetrable National Park, Uganda. People and Plants Initiative UNESCO: People and Plants Working Paper 4, 1-58.

Dall, D.J.,(1985). Inapparent infection of honey bee pupae by Kashmir and Sacbrood bee viruses in Australia.

Griffiths, D.A., Bowman, C.E., (1981). World distribution of the mite *Varroa jacobsoni*, a parasite of honeybees.

Stefan B, Tomislav J, Robert Sieber, et al (2008), Honey for Nutrition and Health

Adjare, S.O, (1990). Beekeeping in Africa. Agric Services Bulletin 68.173p.

Artfield, H.D, (1967) Beekeeping in Western Nigeria. Ministry of Agriculture and Natural Resources: Publication and Information Division, Ibadan, 36p.

Asaba Meteorological Station,(2011) Natural Meteorological Report. In: Meteorological Bulletin, Lagos, and Africa

Crane, E. (1999) the World History of Beekeeping and Honey Hunting, Duckworth, London.

Dandant P (1967). First Lesson in Beekeeping. Washington D.C: University of California Press.

David, J. (2001) Principles and Practice of marketing. McGraw-Hill publishing company, Shopper Hangar's Road, Maiden Head, Berkshire SI 62 QL, England.

Delaplane, K.S. (1993) Honeybees and Beekeeping: A year in the life of an apiary. The University of Georgia, Centre for Continuing Education, Athens, Georgia, 108p.

DFID. (2005) Making Market Systems Work Better for the Poor (M4P): An Introduction to the Concept.

GU, G, Zhang C, and Hu F, (2002) Analysis on the structure of honey production and trade in the word. APACTA, Volume 37 (2): 119-125.

Guoda G and Chun C. (2003) World Honey Trade: Research on world honey production and trade, focusing on China. Bee World, Volume 84 (4): 177 – 183.

Kotler P, Armstrong G (1997). Marketing: An Introduction. New Jersey: Prentice Hall International.

Kugonza D R and Nabakabya D. (2008) Honey quality as affected by handling, processing and marketing channels. Tropiculture 26(2):113-118.

Maku J. (2004) Nile region, Apiculture Development Programmed. APIACTA; 38: 302-306.

Okonta, b.o (2012). Assessment of bee products marketing in oshimili north lga, delta state. Department of Forestry and Wildlife, Delta State University, Asaba Campus, Delta State, Nigeria. G.J.B.B., VOL.1 (2) 2012: 171-174 ISSN 2278 – 9103.

Olagunju, D. (2000) Alleviating Poverty through Beekeeping. Charlie-Tonia Publishers, Oshogbo, Nigeria. 190p. outstanding economic potential: The case of honey in Zambia, CIFOR07

Adjare, S.O., (1990). In: *Beekeeping in Africa.* FAO Agricultural Services Bulletin 68/6...

Aubert, M., Ball, B., Fries, I., Moritz, R., Milani, N., Bernardinelli, I, (2008). Virology and the Honey bee. EU Commission Project Report, Sixth Framework Programme. 458pp.

Bailey, L., Woods, R.D., (1977). Two smaller RNA viruses from honey bees and further observations on sacbrood and acute bee-paralysis viruses. J. Gen. Virol. 37, 175-182.

Bailey, L., Ball, B. V., Perry, J.N., (1981). The prevalence of viruses of honey bees in Britain. Ann. Appl. Biol. 97, 109-118.

MAAIF (Ministry of Agriculture Animal Industry and Fisheries) and MFPED (2000) Plan for Modernisation of Agriculture: Eradicating Poverty in Uganda. Government Strategy and Operational Framework.

Kajobe.R. (2006). Apiculture Research and Development in Uganda. Unpublished internal report, National Agricultural Research Organisation (NARO), Livestock Health ResearchInstitute (LIRI), Tororo, Uganda. 6pp.

Bailey, L., Ball, B. V., Perry, J.N., (1983). Association of viruses with two protozoal pathogens of the honey bee. Ann. Appl. Biol. 103, 13-20.

Ball, B.V.,(1989). *Varroa jacobsoni* as a virus vector. *In:* Cavalloro, R. (Ed.), Present status of varroatosis in Europe and progress in the *Varroa* mite control. Udine, Italy, pp. 241-244.

Ball, R., (2007). Standard Operating Procedure no. NBU/77: *Selecting and packaging disease samples.* National Bee Unit Publication, CSL (Defra), UK.

Ball, B.V., Bailey, L., (1997). Viruses. *In:* Morse, R.A., Flottum, K. (Eds.). Honey bee pests, predators & diseases. A.I. Root Co., Medina. Pp.11-32.

Bauduin, R., (1966). Étude du milieu naturel apicole pour l'émplantation des ruchers au Bugesera-Mayaga. Ministère de l'Agriculture et de l'Évage Republique Rwandaise; Kigali; Rwanda; 29pp.

Békési, L., Ball, B.V., Dobos-Kovács, M., Bakonyi, T., Rusvai, M, (1999). Occurrence of acute paralysis virus of the honey bee (*Apis mellifera*) in a Hungarian apiary infested with the parasitic mite *Varroa jacobsoni*. Acta Vet. Hung. 47, 319–324. 49

Noordaa, J., (1990). Rapid and simple method for purification of nucleic acids. J. Clin. Microbiol. 28, 495-503.

Byham, A., (2007), Standard Operating Procedure no. NBU/92: *Sending diseased honey bee larvae to the laboratory for diagnosis*. National Bee Unit Publication, CSL (Defra), UK.

Kajobe, R., (2007). Botanical sources and sugar concentration of the nectar collected by two stingless bee species in tropical African rain forest. Apidologie 38, 110-121