<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Enhancing Production and Incomes in the Honey Value Chain through Addressing the Challenges of Pests and Parasites of Honeybees in Uganda</th>
</tr>
</thead>
</table>
| **PI** | Dr. Anne Margaret Akol  
Department of Biological Sciences,  
College of Natural Sciences, Makerere University  
P.O. Box 7062, Kampala  
Em: aakol@cns.mak.ac.ug, akolam50@gmail.com  
Tel: +256 772 3677627 |
| **Co-Researchers** | Dr Donald R. Kugonza  
Department of Agric. Production, College of Agric. and Environmental Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda  
e-mail: donkugonza@caes.mak.ac.ug; donkugonza@gmail.com  
Tel: +256414532269; +256782874551; Fax:+256-414531641  
Dr Robert Kajobe  
Rwebitaba ZARDI, NARO, Fort Portal  
Email: robertkajobe@gmail.com  
Mr. Patrice Kasangaki  
NaLIRRI, NARO, Tororo  
Email: pkasangaki@gmail.com |
| **Purpose** | To determine the prevalence of, and develop a pest management approach for varroa mites and small hive beetles infesting hived honeybee colonies in Uganda. |
| **Project Summary** | The beekeeping sub-sector in Uganda is threatened by pests, parasites and diseases that were historically either absent or insignificant in the country. Notable among these are the varroa mite (*Varroa destructor*) and small hive beetles (SHB) (*Aethina tumida*). Varroa mite infestations are often associated with transmission of viral diseases to honeybees and the mites have been implicated in Colony Collapse Disorder (CCD) afflicting honeybee colonies in many parts of the world. SHB destroys the wax combs that honeybees use as food stores and breeding chambers for their young. Eggs and excreta from SHB contaminate honey and make it unfit for consumption. Together, these two pest species can impair apiculture productivity, honeybee pollination services and cause lost income from beekeeping activities. Knowledge of the extent and severity of varroa and SHB infestation in Uganda is unknown but is required prior to development and implementation of holistic sustainable control measures. Country-wide diagnostic surveys of selected apiaries shall be conducted to determine the prevalence and severity of varroa mites and SHB in Uganda. Efficacy trials of specific pest control chemicals shall be conducted and the effective ones recommended for use by beekeepers. The project shall train two MSc students on entomology and pest management and provide exposure to four undergraduate interns. Experiments shall be done ‘on-farm’ (at functional
apiaries) adopting the principles of ‘farmer-field schools’ to strengthen the capacity of beekeepers and district/local government entomologists to recognize and manage the two pest types. Project implementation involves academia (Makerere University), agricultural research institutes of the NARO (Uganda) government officers and beekeeping communities. Research findings from the project shall be communicated in journal articles, in popular publications, the RUFORUM website and via selected social media.

**Key words:** *Aethina tumida*, honeybee health, small hive beetle, pest management, varroa

<table>
<thead>
<tr>
<th>Country and specific locations</th>
<th>Uganda, Igara county (Bushenyi district) and Nakasongola districts</th>
</tr>
</thead>
</table>
| Participating institutions    | • Makerere University (College of Natural Sciences and College of Agriculture and Environmental Sciences)  
• Rwebitaba Zonal Agricultural Research and Development Institute (ZARDI), National Agricultural Research Organisation (NARO)  
• National Livestock Resources Research Institute (NaLIRRI), NARO |
| Start date                    | 1st July 2015                                                    |
| End date                      | 30th July, 2017                                                  |
| Budget                        | USD 59,999                                                       |
Anne M. Akol (PhD)
Department of Biological Sciences, College of Natural Sciences, Makerere University. P.O. Box 7062, Kampala, Uganda
Email: aakol@cns.mak.ac.ug; akolam50@gmail.com
Tel: +256 (0)772 367727

Dr. Anne M. Akol is an entomologist and Chair of the Department of Biological Sciences, College of Natural Sciences, Makerere University (Uganda). Her duties include: teaching, research, mentorship and outreach. Dr. Akol holds a BSc. (Hons) degree in Zoology and Botany from Makerere University, a postgraduate diploma in Education from Makerere University, an MPhil. degree in Applied Biology, specializing in entomology from the University of Cambridge (United Kingdom) and a PhD in Agricultural Entomology from Kenyatta University (Kenya). Her doctoral research and training was undertaken with a research fellowship of the prestigious ARPPIS (African Regional Postgraduate Programme in Insect Sciences) programme tenable at the International Centre for Insect Physiology and Ecology (icipe) based in Nairobi, Kenya. She has participated in several postgraduate training programmes on pest management and science leadership at the International Agricultural Centre, Wageningen University and Research Centre (Netherlands), Michigan State University (USA), Norman Borlaug Institute for International Agriculture (USA), Texas A&M University (USA). Dr. Akol has passion on insects and has devoted her professional life to studying their diversity and behavior with the aim of mitigating their unpleasant aspects while harnessing the beneficial attributes for human well-being. Anne from time to time serves as a science role model for girls in secondary school with the Uganda National Council for Science and Technology (UNSCT), is a member of Nature Uganda, and a trustee for the Volcanoes Safaris Partnership Trust (VSPT), a non-profit organization that contributes funds from luxury safaris to projects that enrich the livelihoods of local communities, promotes the conservation of great apes and restores natural habitats.

Selected publications


Selected Funded Projects

- 2011 – 2014 Expanding the rational and biological control of invasive Liriomyza leafminer flies to major horticultural productions systems in East Africa. Funded by the GIZ. Co-Investigator.
- 2005 – 2012 Conservation and Management of Belowground Biodiversity (BGBD Project). Funded by UNEP through the TSBF Institute of World Agroforestry Centre. Deputy Project Coordinator (in charge of Science) and Team Leader (Biodiversity studies).