



MAJOR EDIBLE INSECT SPECIES IN EAST AFRICA: A REVIEW

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ABSTRACT: *Edible insects are increasingly recognized as a sustainable solution to food insecurity, a source of income, and a solution to some environmental challenges. East Africa, home to nearly 100 edible insect species, provides a rich diversity of insects that are deeply embedded in local diets and cultures. This review highlights the major edible insects consumed in Uganda, Kenya, Tanzania, Rwanda, and Burundi, including termites (*Macrotermes* spp., *Pseudacanthotermes* spp.), grasshoppers (*Ruspolia differens*), caterpillars (*Cirina butyrospermi*, *Dactyloceras lucina*), and crickets (*Acheta* spp., *Brachytrupes* spp.). Common preparation methods include roasting, frying, and boiling, reflecting traditional practices and cultural preferences. Beyond nutrition, edible insects support livelihoods and contribute to ecological sustainability by recycling organic waste. However, overharvesting and habitat loss pose threats to their availability. This review underscores the potential of edible insects in East Africa to enhance nutrition and livelihoods, while calling for research, conservation, and supportive policies to promote their sustainable utilization.*

KEYWORDS: Entomophagy, East Africa, Insects.



INTRODUCTION

Entomophagy, the consumption of insects by humans, is an environmentally friendly approach to increasing food for consumption, and enhancing food security across the world (Huis, 2016). Beyond food and feed, many individuals across East Africa take this as a source of income, further contributing to their livelihoods (Guiné et al., 2021). Some edible insects are valuable in that they can convert solid waste into useful outputs, for example, organic matter (Moruzzo et al., 2021). Located in the tropics, the eastern region of Africa is home for approximately 100 tropical edible insect species (Kelemu et al., 2015a). Studying these species will provide necessary information for identification and conservation of these delicacies, which face challenges of climate change and overexploitation by human beings. This review presents the insect species, commonly eaten in East Africa.

Across cultures, edible insects are mostly consumed as a relish or as snacks after a main meal, and roasting, cooking and frying are some of their common preparation methods. However, some households prepare edible insects by steaming, smoking, stewing, and sometimes toasting.

METHODOLOGY

Peer-reviewed literature was obtained using a search from Google Scholar (<https://scholar.google.com>) looking for publications on insect eating in Africa and edible insects. Key terms used include “entomophagy in East Africa”, and “edible insects in East Africa”. Only original articles and review articles published in the last 10 years were included in this study. Screening of references for selected articles also increased the number of articles considered. Based on these criteria, a total of 21 articles were screened to obtain the required data.

RESULTS

The major edible insects consumed in East Africa are presented in Table 1. The table shows that Uganda has the highest edible insects followed by Kenya, Tanzania, Burundi, and Rwanda, in that order.

Table 1: Major edible insect species consumed in East Africa

Country	Order	Scientific name	Common name	References
Uganda	Hemiptera	<i>Ugada limbalis</i>	Cicada	Okia et al., (2017)
Uganda	Blattodea	<i>Macrotermes nigeriensis</i>	Termite	Igwe et al., (2011)
Uganda	Blattodea	<i>Syntermes soldiers</i>	Termite	Akullo et al., (2018)
Uganda	Blattodea	<i>Pseudacanthotermes militaris</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Pseudacanthotermes spiniger</i>	Termite	Okia et al., (2017)



Uganda	Blattodea	<i>Odontotermes kibarensis</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Pseudacanthotermes sp.1</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Pseudacanthotermes sp.2</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Pseudacanthotermes sp.3</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Pseudacanthotermes sp.4</i>	Termite	Okia et al., (2017)
Uganda	Blattodea	<i>Odontotermes spp.</i>	Termite	Okia et al., (2017)
Uganda	Mantodea	<i>Mantis religiosa</i>	African mantis	Illgner & Nel, (2000)
Uganda	Orthoptera	<i>Gryllotalpa africana</i>	Mole cricket	Illgner & Nel, (2000)
Uganda	Orthoptera	<i>Ruspolia differens</i>	Grasshopper	Odongo et al., (2018)
Uganda	Orthoptera	<i>Cytacanthacris naeruginosus</i>	Short horned Grasshopper	Hlongwane et al., (2020)
Uganda	Orthoptera	<i>Ruspolia nitidula</i>	Grasshopper	Agea et al., (2008)
Uganda	Orthoptera	<i>Ruspolia differens</i>	Grasshopper	Okia et al., (2017)
Uganda	Orthoptera	<i>Normadacris septemfasciata</i>	Red locust	Okia et al., (2017)
Uganda	Orthoptera	<i>Brachytrupes spp.</i>	Cricket	Akullo et al., (2017)
Uganda	Orthoptera	<i>Cyrtacanthacris aeruginosa unicolor</i>	Grasshopper	Akullo et al., (2017)
Uganda	Orthoptera	<i>Acanthoplus discoidalis</i>	Cricket	Hlongwane et al., (2020)
Uganda	Orthoptera	<i>Homorocoryphus vicinus</i>	Cricket	Illgner & Nel, (2000)
Uganda	Orthoptera	<i>Ruspolia Differens</i>	Long horned grasshopper	Odongo et al., (2018)
Uganda	Lepidoptera	<i>Cirina butyrospermi</i>	Caterpillars	Matandirotya et al., (2022)
Uganda	Orthoptera	<i>(G.bima-culatus)</i>	Crickets	Tanga et al., (2021)
Uganda	Coleoptera	<i>Palm weevil</i>	<i>Rhynchophorus phoenicis</i>	Okia et al., (2017)
Kenya	Blattodea	<i>Macrotermes nigeriensis</i>	Termites	Igwe et al., (2011)
Kenya	Blattodea	<i>Macrotermes subhyalinus</i>	Termites	Kinyuru et al., (2013)
Kenya	Blattodea	<i>Pseudacanthotermes spinige</i>	Termites	Christensen et al., 2006; Kinyuru et al., (2013)
Kenya	Blattodea	<i>Pseudacanthotermes militaris</i>	Termites	Kinyuru et al., (2013)



Kenya	Blattodea	<i>Macrotermes spp.</i>	Termites	Christensen et al., (2006)
Kenya	Blattodea	<i>Macrotermes subhyalinus</i>	Termites	Kinyuru et al., (2013)
Kenya	Hymenoptera	<i>Crematogaster mimosa</i>	Termites	Christensen et al., (2006)
Kenya	Hymenoptera	<i>Carebara vidua</i>	Black ant	Ayieko et al., (2012)
Kenya	Hymenoptera	<i>Apis mellifera</i>	Honey bees	Kelemu et al., (2015b)
Kenya	Orthoptera	<i>Gryllus campestris</i>	Field cricket	Kinyuru et al., (2015)
Kenya	Orthoptera	<i>Kraussaria angulifera</i>	Grasshopper	Matandirotya et al., (2022)
Kenya	Orthoptera	<i>Acheta spp.</i>	Cricket	Kelemu et al., (2015a)
Kenya	Orthoptera	<i>(Ruspolia differens)</i>	Bush cricket	Van Huis, (2020)
Tanzania	Hymenoptera	<i>Apis mellifera</i>	Honey bee	Kelemu et al., (2015b)
Tanzania	Lepidoptera	<i>Bunaea alcinoe</i>	Emperor moth	Kelemu et al., (2015b)
Tanzania	Blattodea	<i>Macrotermes natalensis</i>	Soldier termites	Musundire et al., (2021)
Tanzania	Orthoptera	<i>Normadacris septemfasciata</i>	Red locust	Okia et al., (2017)
Tanzania	Orthoptera	<i>Brachytrupes membranaceus</i>	Giant African cricket	Hlongwane et al., (2020)
Tanzania	Orthoptera	<i>Gryllotalpa africana</i>	Mole cricket	Illgner & Nel, (2000)
Tanzania	Orthoptera	<i>Ruspolia differens</i>	Bush cricket	Van Huis, (2020)
Burundi	Hymenoptera	<i>Apis mellifera</i>	Honey bee	Kelemu et al., (2015b)
Burundi	Blattodea	<i>Macrotermes bellicosus</i>	Termites	Kelemu et al., (2015b)
Burundi	Blattodea	<i>Pseudacanthotermes sp. 4</i>	Termite	Okia et al., (2017)
Burundi	Lepidoptera	<i>Eumeta cervina</i>	Caterpillar	Kelemu et al., (2015b)
Burundi	Lepidoptera	<i>Platysphinx stigmatica</i>	Caterpillar	Kelemu et al., (2015b)
Rwanda	Blattodea	<i>Macrotermes subhyalinus</i>	Termites	Kelemu et al., (2015b)
Rwanda	Orthoptera	<i>Ruspolia differens</i>	Grasshopper	Van Huis, (2020)
Rwanda	Lepidoptera	<i>Dactyloceras lucina</i>	Caterpillar	Kelemu et al., (2015b)
Rwanda	Lepidoptera	<i>Eumeta cervina</i>	Caterpillar	Kelemu et al., (2015b)

Major insect orders of edible importance in East Africa

From the 52 insect species enumerated in Table 1, the proportional representation of insect orders, expressed as percentage consumption, was derived, and the results are presented in Figure 1.

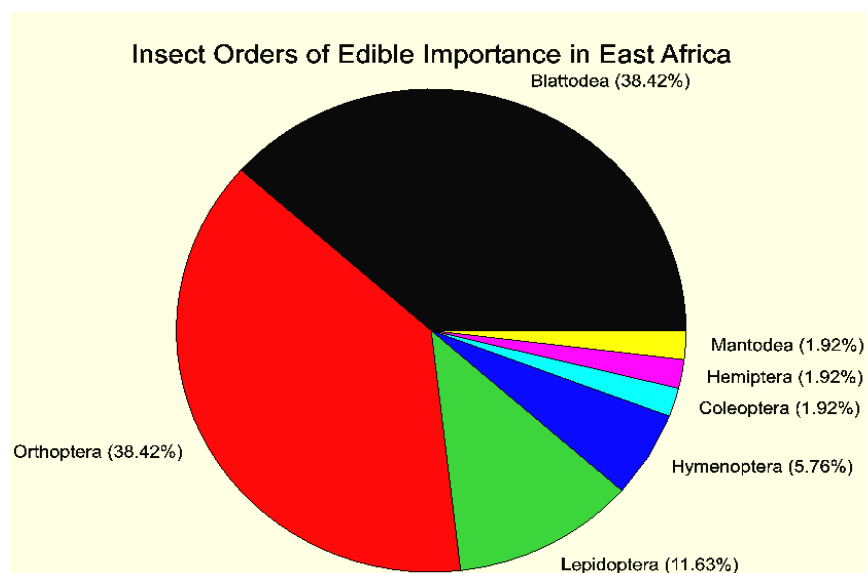


Figure 1: Orders of edible importance in East Africa

CONCLUSION

In East Africa, Uganda consumes the highest number of insect orders, followed by Kenya, Tanzania, Burundi and Rwanda. The major insect delicacies are found in the Blattodea and Orthoptera orders.

FUTURE RESEARCH

This review highlights only the common edible insects reported in the five countries. However, further investigation is needed to determine the extent to which these species are actually incorporated into local diets, since their presence does not necessarily imply consumption. Notably, Uganda, despite its relatively small geographical size compared to Kenya and Tanzania, hosts the largest number of edible insect species. This observation calls for deeper research to establish whether environmental factors such as vegetation types, the extent of vegetation cover, and the proportion of water bodies relative to total land area contribute to this pattern.



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