Global progress in domesticating edible crickets: a review

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Abstract

Crickets are among the most consumed insects worldwide and are one of the few edible insect species that have received significant attention for domestication as a sustainable alternative to wild harvests. However, information on domesticated cricket species and the extent of cricket farming in different parts of the world is scanty and scattered in literature, which is an impediment to the development of the sector. This review analyzed the global progress in the domestication of edible crickets in relation to species being consumed, developments in cricket farming technology, and the levels of domestication, as well as challenges faced in the domestication process. Information was collated from published research articles and edible insect platforms (International Platform of Insects for Food and Feed and Asian Food and Feed Insect Association). Despite the global consumption of 62 cricket species, we found that only 14 have successfully undergone domestication. Among the commonly domesticated species are *Acheta domesticus*, *Gryllus bimaculatus*, *Gryllodes sigillatus*, *Gryllus assimilis*, and *Teleogryllus testaceus*. Researchers

have developed effective methods for rearing crickets using different by-products at a wide range of temperatures. Asia is the leading continent in cricket farming, with the highest number of cricket farmers in Thailand (22,000), followed by America, Europe, and lastly Africa. Generally, cricket farming is constrained by expensive feeds, markets, regulations, and policies. We recommend that promotion of cricket farming globally should focus on having harmonized regulations and policies, increasing consumer acceptability, developing rearing protocols for more species, alternative low-cost feeds, and automating rearing systems.

Data availability

Data will be available upon request from the corresponding author.

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FS wrote the original draft, reviewed and edited the manuscript, JPE, AV, PN, GMM, SVM and MFA revised and edited the manuscript. All authors have read and approved the manuscript.

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Ethics declarations

Clinical trial number

Not applicable.

Conflict of interest

The authors declare no conflict of interest.

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