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How is Beekeeping in the Arab World? A regional survey

How is beekeeping practiced in the Arab world? How do Arab beekeepers work and manage their hives? What are the strengths and weaknesses of the sector in these countries? A new study, recently published in the Journal of Apicultural Research, provides an overview of the current situation.

By Matteo Giusti

A recent study, just published in the Journal of Apicultural Research, aimed to provide an overview of the beekeeping situation in Arab countries, focusing on both biotic threats and beekeepers' knowledge and skills.



A Langstroth beehive in the Research Center of Irbid, Jordan. (Photo by: Matteo Giusti - Apimondia)

The study was based on an online questionnaire sent to beekeepers in 12 Arab countries across North Africa and the Middle East: Algeria, Tunisia, Libya, Egypt, Lebanon, Syria, Jordan, Palestine, Iraq, Saudi Arabia, the United Arab Emirates, and Yemen.

A total of 170 responses were collected from different types of beekeepers: 97.1% were male and 2.9% female. In terms of experience, respondents considered themselves beginners (15%), hobbyists (3.5%), intermediate beekeepers (43.5%), or experts (37.7%).



An apiary in Algeria (Photo by Nil - Wikipedia)

The survey examined the main biotic threats affecting honey bees, as well as beekeepers' knowledge, skills, and management practices, taking into account the different geographical and climatic conditions, particularly Mediterranean and arid regions.

According to the responses, *Varroa destructor* was the dominant biotic constraint, reported by 88.24% of respondents. It was followed by predation from bee-eaters (68.82%), oriental hornets (56.47%), and from infestation of wax moths (38.82%). The small hive beetle was reported as a

problem by 12.38% of the beekeepers interviewed, while the large hive beetle was reported by only 2.35%.

Disease occurrence was seasonal, with *Nosema spp.* most frequently reported during winter and spring, while brood diseases were relatively uncommon.



Traditional beehives in the Research Center of Irbid, Jordan. To date these types of hives are almost not used anymore. (Photo by Matteo Giusti - Apimondia).

Regarding varroa control, organic treatments were preferred by 91.2% of beekeepers, compared with 46.5% who used synthetic acaricides and 18.3% who relied on apiary management practices. Obviously, some beekeepers used more than one control method.

Regarding foulbrood management, the most common approach was the use of apiary management measures (40.6%), followed by no treatment (33%) and chemical treatments (27.7%).

For colony management, seasonal migration was adopted by 72.9% of beekeepers, wintering management by 85.9%, colony splitting by 57.1%, and swarm monitoring by 76.5%.

Supplementary feeding with sugar syrup was commonly used by 90% of beekeepers, while the use of pollen substitutes was less frequent, reported by approximately 20.6%.



Apis mellifera intermissa, a native subspecies of Maghreb, to date often replaced by Buckfastor Carniolan bees. (Photo by: Habib Mhenni - Wikimedia Commons)

Regarding honey bee subspecies, 44.7% of the colonies were identified as Buckfast and 31.2% as Carniolan. Almost all colonies were kept in Langstroth hives.

To analyze beekeepers' skills and abilities, the researchers developed an innovative index, the Beekeepers' Behavioral Index (BBI), based on eight indicators:

1. Professionalism and business expertise: assessment of field expertise, sources of learning, contribution to income, willingness to advise others, and membership in beekeeping organizations.



2. Colony management practices: including migratory beekeeping, winterization (preparing colonies to survive cold temperatures), artificial colony splitting, swarm management, and periodic queen replacement.
3. Bee health protection: incidence of Nosema spp., Varroa destructor infestation, brood diseases, diagnostic capabilities, and the implementation of preventive treatments.
4. Preference for natural treatment methods: evaluation of preferences for natural versus chemical treatments for Varroa, Nosema, and brood diseases.
5. Commercial production and marketing awareness: knowledge of value addition, packaging modifications, commercial production techniques, marketing channels, and diversification of bee products.
6. Extension and training utilization: participation in specialized training, membership in associations, and access to extension services in the region.
7. Environmental challenges: suitability of year-round weather conditions, proximity to pollution sources, and identification of the main environmental challenges.
8. Production improvement techniques: diversity of bee races, hive types (modern versus traditional), and the use of pollen supplements or substitutes.

The BBI revealed a strong commitment to colony management and professional practices, but limited participation in training and extension services, as well as in production improvement initiatives. For most beekeepers, social networks were the main source of technical information.

Comparisons between arid and Mediterranean regions showed similar behavioral patterns, although beekeepers in Mediterranean regions achieved higher scores for colony management.

According to the researchers, the study shows that, despite the wide range of climatic conditions under which beekeepers operate, management practices, access to knowledge, and market engagement are the primary drivers of resilience and productivity, rather than climate alone.

In addition, the BBI could provide a practical tool for evaluating beekeeper behavior and guiding the development of sustainable apiculture across these countries.

References



Al Naggar et al., 2026 – [Beekeeping practices and management capacity shape colony resilience across the Arab world: a COLOSS-aligned survey.](#)