

Regulatory protection of the production and marketing of honey and its derivatives in Mexico

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ABSTRACT

Objective: To analyze state and protection regulations in the production and marketing processes of honey in Mexico.

Design/methodology/approach: The dogmatic legal method was used to analyze existing beekeeping laws in the states with the highest honey production in Mexico, along with secondary regulations and public policies related to the production and marketing of honey and its derivatives.

Results: The laws issued are lacking and insufficient to ensure the protection of the marketing of honey and its derivatives.

Limitations of the study/implications: It was not possible to analyze the protection of all types of honey due to the absence of specific regulations. Production records are subjective and imprecise, resulting in the exclusion of many producers; consequently, support for production is inadequate. The lack of regulation and specific legal frameworks threatens the livelihoods of rural communities where honey is produced.

Findings/Conclusions: It is necessary to enact a federal law to regulate the production and marketing processes of honey and its derivatives, incorporating schemes that value the products, types of honey, and traditional knowledge of indigenous peoples and producers.

Keywords: legal framework, agri-food heritage, sustainability, SDGs.

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INTRODUCTION

Bees provide multiple essential ecosystem services, such as biodiversity conservation, ecological stability, and pollination. They also produce apicultural products like honey and its derivatives, which have a significant impact on the economic well-being of rural communities [1-3]. Mexican honey is highly valued in international markets due to its unique organoleptic and sensory properties [4], a result of the country's rich diversity of nectar-producing flowers [5]. Notable examples include the creamy honey from the Central Highlands, citrus blossom honeys (*Citrus sinensis*) from Veracruz and Tamaulipas,

campanita honey (*Ipomoea triloba*) typical of Oaxaca, Puebla, and Guerrero, and aromatic mangrove honeys (*Rhizophora mangle*) from the Yucatán Peninsula. This floral diversity has given Mexican honey a competitive advantage, positioning the country as the ninth largest producer and sixth largest exporter globally [6]. According to data from the Secretariat of Agriculture and Rural Development (SADER) [6], by the end of 2023, Mexico reached a production of 58,033.18 tons of honey, generating an estimated income of \$2,522,534,377.00 MXN, reflecting the economic significance of this activity within the national livestock sector [7]. The National Atlas of Bees and Apicultural Products [8] highlights that beekeeping in Mexico holds high social and economic value, being considered a viable alternative for fostering development in vulnerable rural communities [9-10]. This activity not only contributes to job and income generation but also serves as an important source of foreign exchange for the country [5]. Furthermore, apicultural production represents a sustainable way of life, as it relies on non-invasive ecosystem management without generating significant greenhouse gas emissions [11]. Thus, it aligns with the principles of Sustainable Development Goal (SDG) 12: “Responsible Consumption and Production,” contributing to the achievement of the 2030 Agenda [12]. The aim of this study was to analyze the Mexican legal framework related to the production and commercialization of honey nationwide, with the aim of identifying existing legal mechanisms for the protection, regulation, and strengthening of this activity and its derivatives.

MATERIALS AND METHODS

Territorial delimitation

For the regulatory analysis, the states with the highest contribution to national honey production were considered, based on consolidated data from the end of 2023 [7]. The nine selected states were: Yucatán (16.28% of national production), Chiapas (10.15%), Jalisco (10.00%), Veracruz (9.03%), Oaxaca (8.26%), Campeche (7.94%), Quintana Roo (4.70%), Puebla (4.11%), and Guerrero (3.64%). From this selection, those states with current apiculture legislation were identified: Yucatán [13], Campeche [14], Jalisco [15], Veracruz [16], Quintana Roo [17], and Guerrero [18]. Once the corresponding state laws were collected, an analysis was conducted. Given that this was an exploratory, non-experimental study, the dogmatic legal method was used, based on the theory of positive law, also referred to as objective law [19]. This approach focuses on the systematic analysis of legal norms to interpret their content, understand the legislator’s intent, and propose solutions to concrete legal issues not only through normative description but also by proposing interpretative alternatives [20,21]. The information was organized into double-entry tables. First, data on the states with current apiculture laws were systematized. Second, a search and review were conducted for complementary regulations corresponding to those state laws. This search revealed that only Yucatán [22] and Campeche [23] have complementary regulatory provisions. A comparative analysis of the identified legal frameworks was then carried out, highlighting commonalities between existing laws and regulations. Special attention was given to innovative provisions offering explicit protection mechanisms for apiculture production. Additionally, federal-level regulatory instruments applicable to the production and marketing of honey were reviewed. These included the current Mexican Official

Standards (NOMs), the National Atlas of Bees and Apicultural Products [8], the National Strategy for the Conservation and Sustainable Use of Pollinators (ENCUSP) developed by SADER and SEMARNAT [24], the Manual of Good Livestock Practices in Honey Production [25], and the Manual of Best Practices in Honey Handling and Packaging [26]. Finally, a content analysis of the applicable regulations was conducted to identify the relevant legal elements affecting the processes of production, handling, transformation, and commercialization of honey and its derivatives.

RESULTS AND DISCUSSION

Six states have beekeeping laws that regulate the general aspects of production processes: Yucatán, Campeche, Jalisco, Veracruz, Quintana Roo, and Guerrero. In contrast, Chiapas, Oaxaca, and Puebla do not have specific beekeeping laws.

In Chiapas, production is regulated under the Law for the Promotion and Health of Livestock, which addresses the protection of livestock activities, control of livestock registries, promotion of organic production, and genetic improvement of bees. It also includes procedures for engaging in organic beekeeping. Oaxaca regulates production through the Livestock Law, which includes provisions related to the establishment of apiaries and their appropriate distances, the obligations of beekeepers, use and protection of beekeeping areas, and pollination services. The law also outlines the responsibilities of the Secretariat regarding honey production and marketing. Puebla regulates beekeeping through the State Livestock Law, emphasizing the establishment of apiaries and prioritizing training, transformation, and innovation in the sector. It promotes support mechanisms for the implementation and coordination of production chains (Table 1).

A review of the beekeeping laws in the six states with specific legislation (Yucatán, Campeche, Jalisco, Veracruz, Quintana Roo, and Guerrero) revealed several common

Table 1. Laws that regulate the honey production process in Chiapas, Oaxaca and Puebla.

Main topics addressed in state laws			
	Chiapas	Oaxaca	Puebla
Organization of beekeeping	Regulate, protect and promote livestock activity. Promote the sustainable development of production, health, safety, quality, classification, control of the mobilization and marketing. Control of the National Livestock Register. Organic production. Genetic improvement of the bee and control of Africanization	Genetic improvement of queen bees. Promotion of markets for livestock products in international markets, providing price details within the different markets. General topics of apiary installation and pollination services. Prohibition of insecticides or pesticides.	Establishment of apiaries; rules for family apiaries. Promotion of productive chains, which serve as a boost to livestock activity. Promotion of training, research and technology transfer among beekeepers in the state, promoting the participation of livestock organizations, educational institutions and those who carry out beekeeping activities.
Beekeeping production articles	19 articles	24 articles	08 articles

Source: Own elaboration based on the livestock laws of the States of Chiapas, Oaxaca and Puebla.

elements. Shared aspects include the regulation of exploitation methods, commercialization, and development of beekeeping products; guidelines for the establishment of apiaries; promotion of bee genetic improvement; frameworks for organizing producers; specific rules for the commercialization and certification of honey and its derivatives; certification of collection centers; and the promotion of specialized research centers in apiculture, among other key points. Each state law also includes specific elements that enhance the valorization of honey. Yucatán focuses on ensuring product safety, establishing advisory mechanisms for beekeepers, and mandating the relevant Secretariat to promote beekeeping, local consumption, and organic honey certification. Campeche prioritizes market access and the creation of a Research Center aimed at training specialized technicians to strengthen technology transfer to producers. Jalisco highlights the central role of beekeeping organizations in bolstering the rural economy, promoting technological exchange as a tool to increase production. Veracruz supports apiculture research and development through the establishment of research centers and ensures that extraction and packaging facilities comply with Official Mexican Standards. Quintana Roo promotes the valorization of apiculture products by strengthening marketing channels, certifying collection centers, products, and by-products, and providing ongoing beekeeper training. It also incorporates Mayan meliponiculture principles as cultural and economic heritage. Guerrero, through its Law No. 393 for Beekeeping Promotion, assigns the state's Secretariat of Economy the execution of programs targeting agro-industrial development, including honey collection, processing, and marketing. It also promotes producer organization under a business-oriented vision, encourages strategic alliances, and proposes financial tools to support the self-management of beekeeping organizations, emphasizing product quality and safety as well as its positioning in local, national, and international markets. Among the six states mentioned, only Yucatán and Campeche have regulations that complement their beekeeping laws (Table 2). Both include provisions regarding the procedures and requirements for the establishment of apiaries and the registration of beekeepers into recognized organizations. Specifically, Yucatán's regulation mandates the competent Secretariat to oversee laboratories that issue official certifications and manage transit permits for honey and its derivatives. However, it omits critical aspects such as product safety, technical assistance to beekeepers, and the promotion of honey consumption. Meanwhile, Campeche's beekeeping regulation outlines strategies to enhance access to

Table 2. Provisions of the regulations of the beekeeping laws of the states of Yucatán and Campeche, Mexico.

Regulations of beekeeping laws	
Yucatan	Campeche
Corresponding procedures to be able to install apiaries.	Procedures necessary for the installation of apiaries.
The Secretariat will register the laboratories that are dedicated to the certification of bee products in the State.	Requirements to be a member of beekeeping organizations
Requirements to be a member of beekeeping organizations.	
Processing transit guides to market honey and byproducts.	

Source: Own elaboration based on the livestock laws of the States of Chiapas, Oaxaca and Puebla.

local, national, and international markets, as well as the creation of the aforementioned Apiculture Research Center.

Although each state has implemented strategies tailored to its specific needs, these efforts remain insufficient due to the lack of clear and territorially grounded regulations. The dogmatic legal analysis conducted was based on the following standards: NOM-004-SAG/GAN-2018, NOM-145-SCFI-2001, NOM-001-ZOO-1994, and NOM-002-SAG/GAN-2016.

From another perspective, the analysis of public policies issued by the Federal Government helped identify key documents such as the Manual of Good Livestock Practices in Honey Production, which establishes guidelines to reduce contamination risks throughout the various stages of production, aiming to obtain a safe, high-quality product. This manual also lays the technical foundations for organic beekeeping. Likewise, the Manual of Good Practices in the Handling and Packaging of Honey outlines requirements for handling and packaging honey, including facility design standards, production stages, traceability, organic honey certification norms, and commercialization criteria. However, both manuals are mainly oriented toward large-scale packaging plants and do not address the specific needs of small-scale producers. On the other hand, the National Strategy for the Conservation and Sustainable Use of Pollinators (ENCUSP) aims to preserve honey-producing bees for the benefit of society, ecosystems, and biodiversity. This strategy is based on the guiding principles of the 2019-2024 National Development Plan, particularly the principle of “Leave no one behind, leave no one out,” with emphasis on respecting Indigenous peoples, their customs, their right to self-determination, and the preservation of their territories. This vision promotes the strengthening of a legal and regulatory framework that supports the protection of pollinators as an essential component of ecosystem services. Finally, the National Atlas of Bees and Beekeeping Products serves as a relevant information source, addressing key issues for those engaged in honey and beekeeping product production. It is a vital reference tool for strengthening national apiculture.

CONCLUSIONS

Beekeeping in Mexico holds high ecological, social, and economic value, yet faces significant regulatory barriers. Although some states have beekeeping laws and there are related official standards (NOMs), there is no federal law that comprehensively regulates bee protection, honey production, certification, or commercialization of honey and its byproducts. The current framework is limited, declarative, and lacks operational capacity. It fails to adequately address products such as beeswax, propolis, or royal jelly, missing their potential in key sectors like pharmaceuticals and cosmetics. Furthermore, it overlooks native bees such as *Melipona*, whose honey possesses unique characteristics and cultural significance, especially in Mayan communities.

Regarding current public policies, these are mainly oriented toward industrial-scale production, excluding small-scale beekeepers who sell through informal channels without quality control, traceability, or safety standards, thereby posing health risks and economic losses. For these reasons, it is essential to strengthen the legal framework to include the various types of honey, recognize traditional knowledge, and promote more

equitable and sustainable value chains. A comprehensive and inclusive regulation would help improve rural incomes and contribute to the achievement of several Sustainable Development Goals.

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