



Evaluating Bee Feeding Practices of Turkish Beekeepers: Insights from the COLOSS Nutrition TaskForce Survey

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Introduction

Bee nutrition plays a critical role in honey bee health, influencing both colony strength and productivity. Understanding the feeding habits of beekeepers is essential for developing sustainable beekeeping practices and ensuring the health of honeybee colonies. This study aims to evaluate the feeding strategies of Turkish beekeepers using the Coloss Nutrition Task Force (NUTRI TF) survey. The NUTRI TF is a community of independent experts in bee nutrition, working to establish a multinational network that facilitates collaboration and produces scientifically sound outputs. The task force identifies nutrition as a major driver of bee health and an important beekeeping management practice, involving stakeholders such as beekeepers, researchers, and associations. This study seeks to fill the gap by investigating the motivations and practices surrounding carbohydrate, protein, and other supplementation among Turkish beekeepers.

Keywords: Honey bee nutrition, nutritional stressors, supplemental feeding, malnutrition, monitoring

Materials and Methods

A comprehensive survey was developed based on a preliminary study conducted the previous year. The survey included 34 questions on beekeepers' practices related to carbohydrate and protein supplementation, as well as the use of additional feed sources. Additional questions aimed to explore the primary motivations behind these feeding strategies, including supporting colony strength, enhancing productivity, and mitigating adverse environmental conditions.

The survey was translated into Turkish and administered using Google Forms to facilitate participation. Data were collected from Turkish beekeepers, compiled, and analyzed statistically to identify trends in feeding practices and the factors influencing beekeepers' decisions. Descriptive statistics and, where appropriate, comparative analyses were applied to examine differences in feeding strategies across beekeeper demographics and regional contexts.



Figure 1. Turkish version of Coloss Nutrition Task Force Survey

Results

The survey results revealed diverse feeding practices among Turkish beekeepers. Carbohydrate supplementation was the most common practice, followed by protein and other supplementary feeds. Motivations for feeding largely centered on maintaining colony strength and mitigating environmental stress, with productivity enhancement cited less frequently. Statistical analysis indicated variation in feeding strategies based on factors such as the size of the apiary, years of beekeeping experience, and regional differences in floral resource availability. These findings provide a snapshot of contemporary beekeeping nutrition management in Turkey and highlight areas where targeted guidance could support sustainable practices.

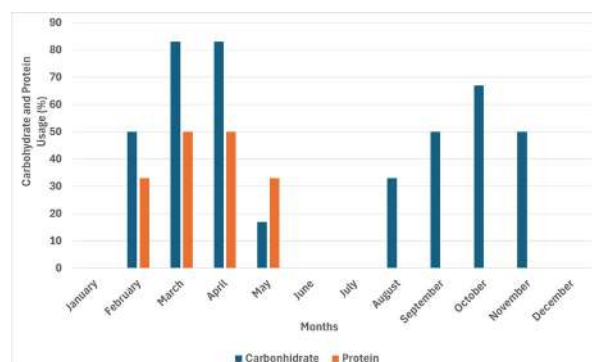


Figure 1. Distribution of monthly carbohydrate and protein feed

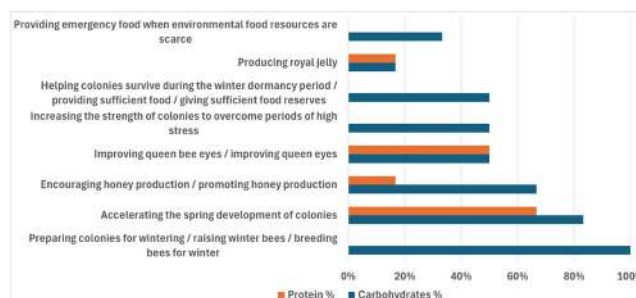


Figure 2. Reasons for providing artificial feed to colonies

Discussion

The results demonstrate that Turkish beekeepers employ a range of feeding strategies to maintain colony health and productivity. The predominance of carbohydrate supplementation reflects the critical role of energy provision in sustaining colonies, particularly during periods of nectar scarcity. Protein and supplementary feeds are used less frequently, suggesting potential gaps in knowledge or resource availability. Understanding the motivations behind feeding practices provides insight into beekeeper decision-making. Supporting colony strength and mitigating environmental stress emerged as primary drivers, emphasizing the importance of adaptive management in response to fluctuating environmental conditions. Conducting this survey in collaboration with beekeepers also highlights the value of citizen science, showing that engaging practitioners in data collection not only strengthens scientific understanding but also ensures that research findings are practically relevant and actionable.



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