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PP-311 [Beekeeping Technology and Quality]

HiveTracks
know your bees!

Honey Story: A Data-Driven and Blockchain-Backed Approach to Honey Authentication

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The Problem
Honey adulteration and mislabeling undermine consumer trust. Current lab tests are costly, sometimes inaccurate, and insufficient to guarantee authenticity.

Our Approach
HiveTracks proposes a "Honey Story":
- A digital identity for honey traceable from hive to consumer.
- Accessible through QR codes for transparency.

How it Works
- Record hive location and production timelines.
- Map nectar sources within foraging radius.
- Correlate flowering data (date, climate, weather)
- with honey produced.

Digital Documentation
Integrated data sources include:
- Photos + metadata
- Hive scales (weight & yield)
- Apiary management software
- Weather, land use, satellite imagery
- Crowdsourced observations

Verification Layers
- DNA & NMR testing
- Pollen & sensory analysis
- Third-party blockchain authentication (HoneyTrail)

Benefits
- Beekeepers: product differentiation, premium pricing
- Consumers: transparent, verifiable information
- Industry: stronger trust and fraud prevention

Impact
A tamper-proof, multi-dimensional record of honey's journey enhances transparency, safeguards beekeepers, and restores confidence in the honey market.

From Honey Story to Jar

Explore the free app!

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Connect with us www.hivetracks.com

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HiveTracks

The beekeeping industry struggles with honey adulteration and mislabeling. Despite efforts to maintain authenticity, current lab testing methods are expensive and sometimes inaccurate, causing confusion among consumers and eroding trust in the honey market.

HiveTracks proposes a data-driven and blockchain enabled solution to establish a “honey story” - a digital identity for honey traceable from origin to consumer and accessible via QR codes. This approach aims to provide definitive proof of a honey's source by meticulously documenting bee hive locations and honey production timelines. The process involves identifying potential nectar sources within the foraging radius of the bee colony, considering blooming nectar sources based on date, weather, and climate. By correlating these data with the honey produced, a clear picture of the honey's origin can be established.

Digital documentation of the honey's journey is made possible through various technologies. These include photos with metadata, hive scales monitoring weight and honey production, and apiary management software tracking beekeeping activities. Data on weather patterns, land use, and satellite imagery are also incorporated, with crowdsourced data providing a multi-dimensional perspective. External authenticity information, such as DNA and NMR testing, and sensory and pollen analysis, can also be integrated into the honey's digital profile. This comprehensive approach, securely saved using distributed ledger technology, ensures the honey's story is verifiable, robust, and tamper-proof.

Corroborated by Honeytrail's third-party blockchain authentication, HiveTracks' honey identification methodology benefits the beekeeping community by enabling product differentiation, allowing beekeepers to showcase their honey's unique qualities and fetch a premium price. Consumers gain access to transparent and trustworthy information about the honey they purchase, fostering greater confidence in the product.

By presenting this framework and illustrating its application through real-world examples, HiveTracks aims to demonstrate how technology can combat honey fraud and enhance transparency in the honey market. This will safeguard the interests of beekeepers and consumers and rebuild the integrity of the honey industry.