Honey Adulteration

Briefing Paper

Overview

- This paper concerns a serious and pressing issue impacting the global and UK honey industry - Honey Adulteration and Fraud.
- 51,000 tons of cheap adulterated honey is being imported into the UK, of which 77% is from China
- This 'honey' is blended packed and sold for impossibly low prices.
- Genuine honey producers are struggling to compete with such low prices.
- Honey authenticity tests were carried out on imported blended honey from UK Supermarkets in 2018, 2109, 2020 and 2024. Results suggested that the majority of samples were not authentic. All British honeys tested were found to be authentic.
- The World Beekeeping Awards hosted by Apimondia, will no longer include Honey as a category in their competition. This was necessitated by the inability to have honey fully tested for adulteration and make awards at the Congress. [17]
- Labels are often confusing for consumers – country of origin is hard to ascertain
- Consumers think they are buying Pure Honey and are being deceived

Summary of actions to be taken

- Buy British honey
- Contact your MP
    - Encourage the formation of a new APPG (All Party Parliamentary Group) for Honey
    - Encourage the alignment of the UK with EU re labelling honey with country of origin
- Encourage UK supermarkets to stock British honey rather than imported blends.
- Investigate methods for robust honey testing, ensuring that when consumers purchase honey, it is truly honey in the jar.

The Problem

- Honey has been found in global food databases to be the second most adulterated foodstuff worldwide, alongside herbs/spices. [1]
- The global nature of the honey market has created complex supply chains, making it relatively easy to adulterate honey with various sugar syrups that are often difficult to detect.
- UK government fails to test honey appropriately or take enforcement action when adulteration is found. This allows the issue to continue growing.
- In November 2024, The Guardian reported that "more than 90% of sampled products bought from large British retailers failed pioneering authenticity tests." [2] Tests carried out in 2018 and 2020 on imported honey in UK supermarkets using different tests found similar results. [3, 4]
- The sheer volume of adulterated honey entering the UK is alarming and remains poorly understood by UK consumers. Given that 86% of honey sold in the UK is imported, decisive action from the UK Government is necessary.
- British beekeepers produce 14% of the honey consumed in the UK.
- The UK imports 50,917 tons of honey per year of which 39,405 (77%) is from China [5]
- UK government consistently deny that there is a problem of honey fraud in the UK, and regularly denounce tests as 'lacking veracity'. [15][16]
- Food Authenticity Network (part of Food Standards Agency) wrote on LinkedIn [20] that Mechanically dried honey (MDH) is openly accepted to be on sale in the UK (MDH does not fit the definition of honey in UK law.) They also suggested that MDH should be added to databases of authentic honey as it shows up as adulterated.

Consumer Confusion

- Consumers need to be able to make an informed choice about what they are buying.
- Most supermarket honey is labelled as a "blend of EU or non-EU countries," which offers little information to consumers about country of origin.
- Adding to consumer confusion is the practice of marketing honey, with words or images designed to evoke the image of local beekeeping while often being imported honey. Consumers could be misled into thinking that the honey comes from the UK.
- Honey importers should be able to clearly trace and verify the sources of their imports.

Honey authenticity is a concern for many reasons

- Honey is a high value product with a long history of adulteration.

- The global market for honey is expanding and many countries in Europe, North America and parts of Asia are dependent on imports to meet this demand.
- Existing standards, testing and enforcement are currently not strong enough to combat and counter what has become an industrial scale issue.
- The UK is now known for the absence of honey testing and lack of enforcement when breaches of regulations are found.
- Chinese 'honey' factories are producing 'UK grade' honey designed for the UK market which has no testing [6]
- The international market regularly sees 'honey' priced by the sophistication of the importing country's testing. [6]

Honey fraud

- Honey can be adulterated in several ways. One of the most common is to bulk out honey with cheap bio-engineered and purified syrups based on corn, rice and other crops. Sometimes enzymes, pollen and colours can be added. This is food fraud
- In China, beekeepers practice 'modern beekeeping', where nectar is extracted every day. This is not honey and has a very high moisture content. In order to prevent fermentation, it has to be mechanically dried in a factory. Mechanically dried honey (MDH) does not fit the definition of honey in the Honey (England) Regulations 2015.[9] MDH is defined as adulteration in the Apimondia statement on Honey Fraud (2020)

> *Different types of honey fraud can be achieved through (but not limited to):*
>
> 1. *Dilution with different artificially manufactured syrups produced, e.g., from corn, cane sugar, beet sugar, rice, wheat, etc.*
> 2. *Harvesting of immature honey (before the bees have had a chance to transform nectar into a product which has the chemical constituents and composition of authentic honey) as a planned, systematic and purposeful mode of production, coupled with the active dehydration of the extracted immature product by the use of technical equipment including, but not limited to, vacuum dryers.*
> 3. *Using Ion-exchange resins to remove/reduce residues and/or constituents of honey such as HMF and/or lighten honey color.*
> 4. *Masking and/or mislabeling the geographical and/or botanical origin of honey.*
> 5. *Artificial feeding of bees during a nectar flow.*
>
> *The product which results from any of the above described fraudulent methods shall not be called "honey", neither the blends containing it, as the most widely accepted international standards like Codex Standard (1981) and the European Honey Council Directive 2001/110/EC (2001) only allow blends of pure honeys.* **Apimondia statement on Honey Fraud 2020**

- In February 2025, the Food Authenticity Network UK (part of the Food Standards Agency) wrote on LinkedIn, that MDH has been for sale in the UK for years, and is 'openly accepted' . [19]

- As a result of honey adulteration
  - Consumers are being deceived
  - The global market in honey is being distorted
  - Adulterated honey is being sold at below the cost of genuine honey production.
  - Beekeepers' livelihoods are being impacted as prices are forced down.
  - Food security could be at risk if there are less beekeepers with pollination contracts

Honey Testing

- Honey testing technology is advancing rapidly but an 'arms race' exists between fraudsters and scientists. No sooner is a test developed than fraudsters find a way around the test.
- Honey is a complex substance in which there are many variables, and it has become clear that there is no one test that can identify adulteration in honey on its own.
- It is crucial that the UK is part of the international initiatives on developing a suite of globally agreed tests
- Although there are accredited tests such as EA/LC IRMS they are not designed to detect the bio engineered syrups that are most used these days, although they are still used by some governments including UK.
- Tests such as NMR are widely used in the food industry including wine and other foods, with accreditation currently in process for use with honey. Chinese honey factories however are now producing 'NMR proof' 'honey' designed to get round these tests. (6)
- DNA Metagenomics is a technology already tried and tested in the field of foetal genetic screening and is showing a great deal of promise as a sophisticated, and reliable test of adulterated honey. This test is not accredited, and there are some concerns about the size of the authentic honey database, but the team are aiming for accreditation in 2025. (7)

Fighting Back

Honey Authenticity Network UK (HAN UK) and other organisations have been campaigning for some time to raise awareness of this issue and to call for National and International action to combat the fraud.

Action is being taken in Europe:

- Apimondia statements on honey fraud
- Establishment of the European Beekeeping Association (11)

- The ‘Clean Up the Honey Market’ campaign [12] who have invited countries to send samples of imported supermarket honey for DNA Analysis.
- So far 80% of imported honey in Germany failed the tests, 62.5% of imported honey in Finland failed, 100% imported honey in Austria failed. More samples are being analysed
- European Professional Beekeepers Association held seminar on DNA honey authenticity analysis [14]
- Turkish government named big honey brands for adulteration with sugar syrup [13]
- New labelling requirements (% by country of origin) as part of the EU’s Breakfast Directives [8]
- The establishment of a Honey Platform [8] to gather the best available expertise on honey authenticity and traceability, and to develop a globally agreed suite of authenticity tests.

The UK has not, as yet adopted similar policies and two parliamentary petitions for labelling changes were rejected in the last few years.

Actions to be taken

Changes to Honey Labelling Regulations: [15]

- The new EU Honey Directive came into law in 2024 [6] We call on UK authorities to adopt this update, as our current Honey Regulations are based on the old Honey Directive. [8]
- Honey labels will then be required to include a list the countries of origin, rather than using ‘*a blend of…..’* . This simple legislative change would ensure consumers can make an informed choice about what they are buying without significantly raising costs.
- Investigate the possibility of relabelling cheap ‘honey’ that contains syrup as ‘honey syrup’. This would again give consumer informed choice over what they buy.

Formation of an All-Party Parliamentary Group (APPG) for Bees and Honey.

There used to be an All-Party Parliamentary Group (APPG) for Bees and Honey. We would ask for that to be reformed. An APPG could focus on supporting the UK honey industry, with initial objectives to:

- Align UK government testing strategy with EU Honey directive.

- Investigate current government reluctance to test appropriately, or to take enforcement action, leaving UK way behind our international colleagues
- Encourage the development of a balanced panel of experts to advise government.
- Investigate methods for robust honey testing, ensuring that when consumers purchase honey, it is truly honey in the jar.
- Explore ways to support the UK's small-scale commercial beekeeping industry to increase the volume of domestically sourced honey, with added benefits for pollination and overall bee health.
- Encourage UK supermarkets to stock British honey rather than imported blends.

Contact:

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References

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3. http://www.honeyauthenticity.org/images/Alert%20I%20Honey%20Authenticity%20Project.pdf
4. https://www.honeyap.org/files/Document_III_HAP.pdf
5. https://www.trademap.org/Country_SelProductCountry_TS.aspx?nvpm=1%7c826%7c%7c%7c%7c0409%7c%7c%7c4%7c1%7c1%7c1%7c2%7c1%7c2%7c2%7c1%7c1
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7. https://mda-test.com/en/
8. https://agriculture.ec.europa.eu/news/clearer-rules-origin-and-composition-honey-commission-sets-honey-platform-2024-06-13_en
9. https://www.legislation.gov.uk/uksi/2015/1348
10. https://www.apimondia.org/uploads/7/6/4/3/76436993/apimondia_statement_vegan_honey[1].pdf
11. https://ebaeurope.eu/about-eba/
12. https://cleanupthehoneymarket.com
13. https://www.turkiyetoday.com/lifestyle/popular-turkish-brands-found-selling-fake-honey-heres-how-to-spot-and-avoid-78303/
14. https://www.apimondia.org/uploads/7/6/4/3/76436993/apimondia_statement_on_honey_fraud.pdf

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17. https://apimondia2025.com/?p=wba-contest
18. https://www.apimondia.org/uploads/7/6/4/3/76436993/apimondia_statement_2020_final_version.pdf
19. https://www.linkedin.com/posts/food-authenticity-network_honey-activity-7297545088870567944-M7KJ?utm_source=share&utm_medium=member_desktop&rcm=ACoAAALXhPoB89OE6fc6Mo-dBa0DZWhvFlUP8NI
20.

Also……

Vegan 'honey'

The global accepted official definition of Honey...

> *"Honey is the natural sweet substance produced by honey bees from the nectar of plants or from secretions of bees living parts of plants or excretions of plant sucking insects on the living parts of plants, which the bees collect. Honey (England) Regulations 2015 (9)*

- Mass produced vegan ‘honey’ or slightly adapted names is increasingly appearing in UK shops.
- However, these products do not meet the official definition
- Apimondia (the World Beekeeping Association) has produced a strong expert statement on Vegan Honey explaining the situation (10)
- There is concern the Vegans are being manipulated by commercial organisations to buy syrups disguised as something else.
- If you see vegan ‘honey’ for sale be aware, that whatever the claims, that it is a form of food fraud and breaches trading standards laws.

Further information and resources

Metagenomic DNA

Laboratory Director, Kaarel Krjutškov, Celvia CC AS laboratory, +372 7330 401, kaarel.krjutshkov@ccht.ee

https://mda-test.com/en/

Test results

German results 2024 - 80% suspect

https://youtu.be/thx5Duzq4UI

Finnish results – 62.5% suspect

https://www.helsinkitimes.fi/world-int/25717-honey-fraud-scandal-non-eu-imports-under-fire-finnish-honey-stands-pure.html

European Professional Beekeepers Association

President Bernhard Heuvel, European Professional Beekeepers Association, +49 177 486 47 48, pres@probees.eu

EU Honey Platform

https://agriculture.ec.europa.eu/news/clearer-rules-origin-and-composition-honey-commission-sets-honey-platform-2024-06-13_en

EU Honey Directives

https://eur-lex.europa.eu/eli/dir/2024/1438/oj

EU honey survey 2022-23 (From the Hives Coordinated action)

https://food.ec.europa.eu/food-safety/eu-agri-food-fraud-network/eu-coordinated-actions/honey-2021-2022_en

https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/food-fraud-how-genuine-your-honey-2023-03-23_en

UK Honey Petitions

https://petition.parliament.uk/archived/petitions/607735

https://petition.parliament.uk/archived/petitions/624402

European Beekeepers Association

https://ebaeurope.eu/

https://ebaeurope.eu/beekeeping-cannot-survive/

Apimondia - The International Federation of Beekeepers' Associations

https://www.apimondia.org/uploads/7/6/4/3/76436993/apimondia_statement_on_honey_fraud.pdf

https://www.apimondia.org/latest/apimondia-statement-on-vegan-honey

Further resources

https://www.theguardian.com/business/2021/nov/28/bee-aware-do-you-know-what-is-in-that-cheap-jar-of-honey

https://www.wired.co.uk/article/honey-fraud-detection?fbclid=IwAR1gMN3NyQmZxbwQVly8HLEnZGviprqYH3PPagUd4crB9dUugmMBjydb9rQ

https://www.dailymail.co.uk/news/article-8973415/Supermarket-scandal-sees-honey-bulked-cheap-sugar-syrups.html?fbclid=IwAR2d05OEMDjHoaDucjj7M3kUPgKE0yp-6GUODxoXSgXdhTZHoIe10aUne08

https://www.apiservices.biz/documents/articles-en/history_honey_fraud.pdf

https://www.cseindia.org/honey-fraud-11207

https://www.cseindia.org/food-fraud-10493

Norberto Garcia - Apimondia

https://www.youtube.com/watch?fbclid=IwAR38II8hXhlwLEZ9gvkJjYdpienZhUAcb0791CNQujix9XT-QEDmB4T-qJw&v=-LLKMpA-zfg&feature=youtu.be

Etienne Bruneau

Apimondia https://www.youtube.com/watch?v=rhmQ03Pwk5M

Ron Phipps

https://www.apimondia.org/latest/honey-authenticity-podcast-with-ron-phipps?fbclid=IwAR16aRa0t1cbUDRtexrCerxrIw0B9UeUYCxdXlIF5uYPn96xD9NNioTcw0o

https://www.documentarymania.com/player.php?title=Lawyers%2C%20Guns%20and%20Honey&fbclid=IwAR3y56im7QjIpSPPH4FF5ZDm4MvZ5ype_mLuY4PjpuAkzVmuWaDr-lDp7xs