

Multiple Modern Modes of Adulteration of Honey (MMMA)

Ronald Phipps

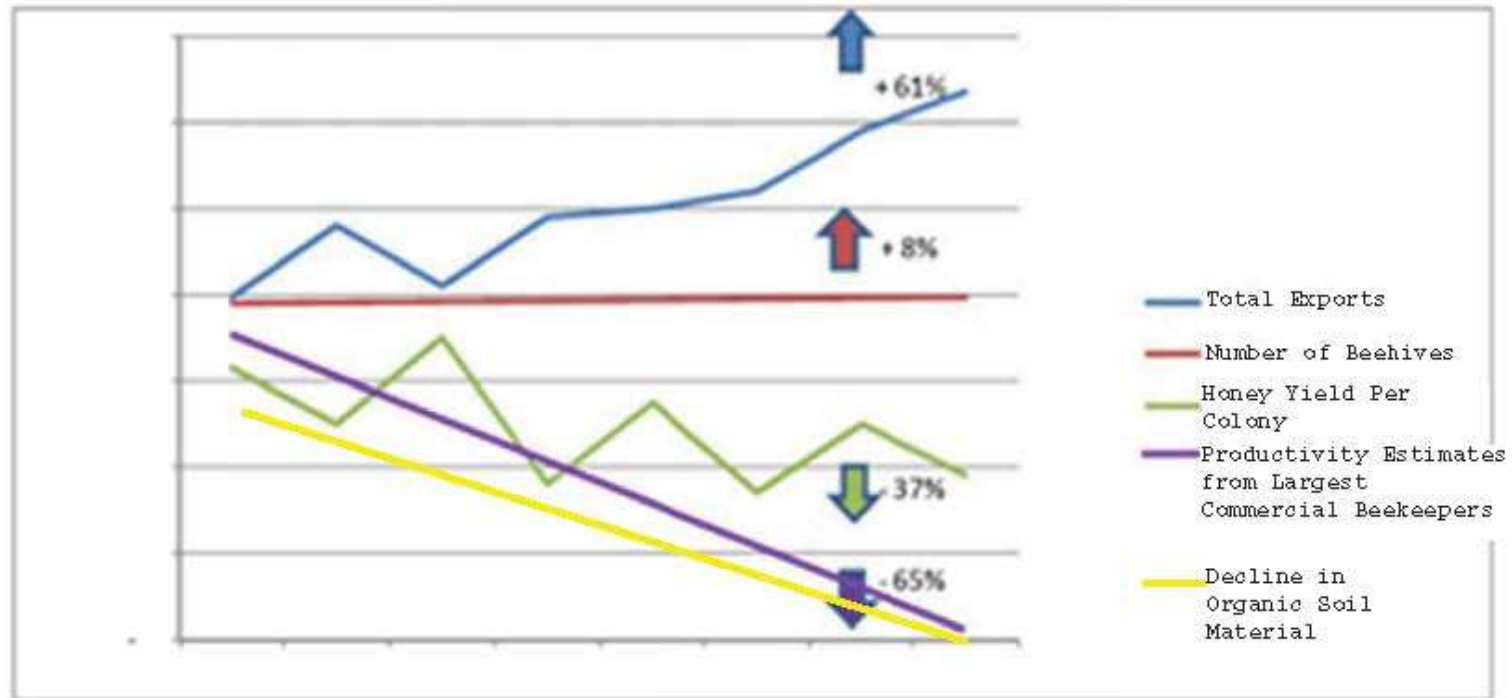
February 22, 2024

- We want to thank you for your invitation to visit your laboratory and to discuss the problem of economically motivated adulteration of honey. Food Fraud in the honey sphere has a long history and very sophisticated modern modifications. This phenomena has very wide implications and requires sophisticated analysis to diagnose and overcome the problem.
- The report from the Joint Research Center which was released in 2023 was an earthquake to the international cabals which have orchestrated the adulteration which has provoked a profound crisis for beekeepers of the world. For the beekeepers, it was a sweet breath of spring air that rekindled hope.

- Let me open with a little story. I heard a few years ago that a Chinese delegation visited French beekeepers. The honey market had already collapsed from which international and French beekeepers suffered. The French beekeepers told of the plight from which they saw no escape.
- The Chinese said, “We have no problem with the honey market. We can produce large quantities and sell them at very low prices and make great profits. The problem with you western beekeepers is that you don’t know how to make honey in the modern way.”
- This brief talk concerns how Chinese producers do this, but at a loss of Authenticity. The large quantities at low prices are produced despite adverse conditions for honey production are possible because of Multiple Modern Modes of Adulteration, which were invented in China, and now have been exported to countries where Chinese companies have attained ownership in the past decade. This has allowed China to have an oversized influence on the international honey market.

- We must also acknowledge the French beekeepers and their leaders, were the first to discern and protest against the distortion of the market by Chinese practices. The French leadership pointed out the problem and its basis at the end of the preceding millennium. They did so with careful study and facts.

Honey Exports, Beehives, Yield 2007 to 2014



Expanding Honey Exports vs. Adverse Conditions for Production

- This graph is illustrative of the fundamental contradictions inherent within the global honey market. This graph was formed by Prof. Norberto Garcia, Richard Adee, former President of the American Honey Producers Association, and myself, using data from the Food and Agriculture Organization and other agricultural data. The graph illustrates that the amount of “honey” circulating in the international market is far greater than the amount of authentic honey which can be produced, given the bee populations, stresses on bees, steady erosion of productivity per hive and climatic stress.

Honey Identity

- In the case of Honey, the Codex regulation to which most international governments subscribe defines honey as a product of the “completed interaction of bees and flowers,” by which the nectar of botanicals are transformed into honey through the completed interactions of bees and nectar.
- Following the suggestion of Prof. Michael Roberts of the UCLA School of Law, who prepared a White Paper on Honey, the U.S. Pharmacopeia convened a panel to write a Honey Identity Standard.
- Apimondia, the world’s largest association of beekeepers, whose President is now Dr. Jeff Pettis, formerly a research scientist with the US Department of Agriculture, put forth a comprehensive and insightful standard with criteria to distinguish pseudo from authentic honey. Furthermore, huge databases of authentic honey and modern sophisticated scientific methodology have been employed to examine the variables, parameters and profiles of authentic honey in all of its botanical diversity and charm.

USP Honey Identity Standard 2022

- ▲Honey
- DESCRIPTION
- **Introduction**
- Honey is the natural sweet substance produced by species within the *Apis* genus from the nectar of plants or from secretions of living parts of plants or excretions of plant-sucking insects on the living parts of plants which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store, and leave in the honey comb to ripen.
- Honey consists primarily of simple sugars, predominantly fructose and glucose, as well as other substances such as organic acids, enzymes, and solid particles derived from nectar collection by bees, including pollen. The color of honey varies from nearly colorless to dark brown. The consistency can be fluid, viscous, or partially to entirely crystallized. These parameters are dependent upon the botanical origin of the honey, processing, specific composition, storage temperature, and related factors. Most honey eventually crystallizes naturally. The flavor and aroma of honey are variable, mainly depending on its botanical origin.
- This standard applies to all honeys produced by species within the *Apis* genus and covers all styles or presentations intended for direct consumption, including honey used as an ingredient in other foods. It is important to note that the product totally or partially produced by bees when foraging external sources other than nectar or honeydew (e.g., juices, syrups, etc.) or derived from products used for artificial feeding is not considered honey according to this standard. |

Multiple Modern Modes of Honey Adulteration (MMMA)

- There has been an enormous proliferation of sophisticated and modern modes of adulteration in the past two decades. These modes are created and cultivated by very nimble and clever actors who are engaged in Economically Motivated Adulteration (EMA).
- The Economic Motivation for Adulteration (EMA) is illicit profits.
- These modes for honey include Factory Dehydrated Nectar (FDN), resin technology to remove offensive flavors, antibiotics and dark colors, blending of inexpensive bioengineered sweeteners whose costs are 10-20% that of authentic honey, and improper feeding of bees during production and harvest time.

These modern modes of Adulteration include :

1. The extraction of high moisture, immature honey,
2. The use of resin technology to purge honey and / or pseudo honey of dark colors, antibiotics, residues, offensive flavors and aromas,
3. The blending of inexpensive bio- engineered sweeteners,
4. The illegal and extensive feeding of bees with cheap sweeteners during production times,
5. The introduction of cheap sweeteners into the hives and cells in order to give the adulterated product the semblance of real honey. That semblance is expressed in tiny traces of naturally occurring components.

Hiding Honey Fraud

- HMF reducers are used to mask high HMF which are associated with rapid extraction of immature honey with high moisture.
- Ultrafiltration of honey, including removal of pollens, has been used to disguise the geographic origin of honey and is a form of customs fraud which was used after high antidumping duties were assessed on Chinese honey in the 2000s.
- Blending of conventional honey with organic honey is another form of honey fraud.
- The production of organic honey is increasingly difficult due to the pesticides that migrate, conveyed by wind and rain, into regions protected for organic production.

- The President of the German Beekeepers association provided the following photograph of a Chinese honey processing plant.
- Mr. Walter Haefeker drew the contrast between “Fast and Slow Food” using descriptions of Chinese modes of honey production.
- He compared the Chinese honey factories to modern sophisticated European breweries. What is appropriate to produce beer is inappropriate to produce authentic honey.

Improper Modes of Honey Processing

2018 – W. Haefeker



Resin Technology and Honey Syrups

- Chinese companies advertised resin technology on the Chinese website Alibaba to honey exporters. Indian honey exporters openly praised and aggressively promoted this technology a decade ago during meetings of international honey importers, packers and beekeepers.
- Inspectors of Indian honey factories reported widespread use of Chinese resin technology and Chinese syrups. These reports were suppressed by leadership of the cartels.
- Eventually factories producing bioengineered sweetener syrups to evade detection by government authorities were set up in India.

Working Principles

Sunresin Special Adsorbent Resin for Honey Treatment is designed with unique structure and materials so that aimed substances like antibiotics, pesticides and HMF can be adsorbed when fully touching with honey liquor. The unique design and long application experiences make it a perfect technology option to remove those harmful and restricted substances from honey without any changes, destruction or lost on the wanted honey sugar, protein, enzymes etc.

Advantages of Seplite LSF941

- 1.Harmful and Restricted Substances Removal
- 2.High Stability and Efficiency in System Operation
- 3.Lower Cost for Operation and Maintenance
- 4.Easy Operation and Long Life Time
- 5.Technology Application Non-Traceability in Processed Honey

Product Details

Company Profile

Transactions Overview

Report Suspicious Activity

Send message to supplier

Product Description

Packaging & Shipping

Company Information

Company Profile

We ,Sunresin, are the China's biggest special resin supplier , and also rank the No.1 resin solution provider for beverage and food processing, especially for Juice and Honey business.

For honey ,our products can effectively remove the antibiotics in honey. so that honey product can be exported to US and EU. With our effort, many honey companies and juice producers of many countries are successfully getting rid of the barriers from US due to the restrictions on antibiotics.

Company Certificates

Sunresin has aquired many authorized certificates as ISO9001, ISO14001, **FDA**, KOSHER, CE, WQA, TUV etc for our products and managment. These guarantee our RD, production, qauality and managment are among the first-class of the industry.

!!!



To: Sally Qu

Enter your inquiry details such as product name, color, size, quantity material, etc.

* Quantity:

1

Cubic Meter...

Send

I agree to share my Business Ca to the supplier.

Quotes from Sunresin Ad

- We, Sunresin, are China's biggest resin provider and also provide resin for the beverage and honey industries.
- Our products remove residues so that the products can be safely imported into the U.S. and the E.U.
- With our efforts many companies are getting rid of restrictions on antibiotics.

- This Sunresin advertisement (which has repeatedly appeared) is as fraudulent as the honey produced using this chemical process.
- Walter Haefeker, has aptly described unripened high moisture honey as “ Factory Dehydrated Honey.” The Chinese call the product “Shui Feng Mei “ or “Water Honey.“
- Chinese honey exporters have openly told experts that 95% of their honey exports are of immature honey. Indian honey exporters have openly confessed that 100% of their honey exports are of immature honey. Vietnamese exporters have said: “ Of course we could produce mature authentic honey but if we did we could not produce the quantities and sell at the prices demanded by US Importers and US Packers .
- Authentic honey, in contrast is neither “ Fast Honey “ nor “Factory Dehydrated Honey “ but the product of the full and completed interactions of bees and plants, of the Zoological and Botanical Kingdoms.

U.S. FDA denies name “honey” to honey treated with resin technology - 2016

- “Resin technology involves addition of water to honey for ease of filtration. Although the added water is later removed, the basic nature and essential characteristics of the resulting food differs from that honey...The product should be labeled with a name that sufficiently...distinguishes it from honey which has not be treated with resin technology.”

Honey produced using resin technology cannot be called “honey” – US FDA 2016



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Food and Drug Administration
College Park, MD 20742

February 23, 2016

Ronald Phipps
CPNA International, Ltd.
1043 Oyster Bay Road
East Norwich, New York 11732

Re: Resin Technology used in honey processing
Your email dated January 22, 2016

Dear Mr. Phipps:

This is in response to the email dated January 22, 2016, concerning the use of resin technology in honey production. You mentioned that you received my contact information from Mr. Robert Parsel, a Special Agent in the Office of Criminal Investigations, Food and Drug Administration (FDA). You stated that a Chinese manufacturer asserts in its sales promotion that this technology is approved by the FDA for use with honey. You also stated that this sales claim is being made on a prominent business to business website, Alibaba, and others. You questioned whether FDA formally and officially approved the use of “Saronite Technology” or “resin technology” in the application to honey.

According to a powerpoint presentation that I received from Mr. Parsel, the resin is a “DVB and styrene copolymer.” Styrene-divinylbenzene cross-linked copolymer resins may be safely used as articles or components of articles intended for repeated use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, in accordance with the conditions prescribed in Title 21 of the Code of Federal Regulations (21 CFR) §177.2710, so that usage as a resin to remove carbendazim may be covered by this regulation, if the resin complies with the identity and specification requirements prescribed in the regulation. However, the regulation does not address the use of the resin for any specific food products or containers, including carbendazim in honey, nor is such specific use elsewhere addressed in FDA regulations. If you have further questions about sales claims citing specific approval for usage in the removal of carbendazim in honey, you may wish to contact the [Federal Trade Commission \(FTC\)](#), which has primary responsibility for claims in advertising, including direct marketing materials.

Resin technology involves addition of water to honey for ease of filtration. Although the added water is later removed, the basic nature and essential characteristics of the resulting food differs from that of honey. Therefore, calling the product that has been treated with the resin technology simply “honey” would not accurately identify the food generally understood

to be honey. The product should be labeled with a name that sufficiently describes its characterizing properties in a way that distinguishes it from honey which has not been treated with resin technology. The product made by treating honey with resin technology should bear an appropriate name in accordance with the provisions in 21 CFR 3.102.A. As you may be aware, FDA issued draft guidance on April 9, 2014 for the proper labeling of honey and honey products. FDA is currently working on finalizing this guidance and is taking comments submitted to the agency into consideration.

Thank you for taking the time to email us and bring this issue to our attention. We trust the foregoing will be helpful to you.

Sincerely,

Charlotte Liang, Ph.D.
Plant Products Branch
Division of Plant Products and Beverages
Office of Food Safety
Center for Food Safety and Applied Nutrition
Food and Drug Administration

Fructose syrup passes honey tests

The screenshot shows an Alibaba.com product listing for fructose syrup. The page features a search bar at the top with the text "What are you looking for..." and a "Search" button. Below the search bar, there are navigation links for "Categories", "Ready to Ship", "Trade Shows", "Services", "Membership", and "Help". The product title is "C3C4C13 NMR SMT TMR pass fructose syrup f42 f55". The price is listed as \$729.71 for 2-9 tons, \$720.00 for 10-49 tons, and \$512.00 for 50 tons or more. A coupon for \$100 off is available for orders over \$10,000. The quantity is set to 2 tons. The seller is Anhui Yuansen Biological Technology Co., a manufacturer and trading company with a 100% response rate and a 100.0% on-time delivery rate. The product is ready to ship and in stock. The page also includes a video player showing a factory interior and a "View larger image" link.

Alibaba.com Global trade starts here™

Products ▾ What are you looking for... Search NEW

Sign In Join Free Messages Orders Cart

Categories ▾ Ready to Ship Trade Shows Services ▾ Membership ▾ Help ▾ Get the App English - USD ▾

Home > All Industries > Chemicals > Admixture&Additives > Food Additive Products > Thickeners (154549691) [Subscribe to Trade Alert](#)

Ready to Ship **In Stock** **Fast Dispatch**

C3C4C13 NMR SMT TMR pass fructose syrup f42 f55

2-9 Tons	10-49 Tons	>=50 Tons
\$729.71	\$720.00	\$512.00

US \$100 OFF Order more than US \$10000 [Get Coupon](#) ▾

Quantity: Tons

Trade Assurance protect your orders from payment to delivery

Payments:

Alibaba.com Logistics - Inspection Solutions

Anhui Yuansen Biological Technology Co., Ltd.

TYR

Manufacturer, Trading Company

100% Response Rate

\$50,000+ for 2 Transactions

100.0% On-time delivery rate

2 Tons	\$1,459.42
Ship to <u>United States</u> by <u>Express UPS Exp...</u>	\$284.35
Lead Time 5 days	





[View larger image](#)

Fructose Rice Syrup for Honey



The screenshot shows the Alibaba.com interface for a product listing. At the top, the Alibaba.com logo is on the left, and a search bar with the text "What are you looking for..." is in the center. To the right of the search bar are icons for "Sign In Join Free" and "Messages". Below the search bar, there are navigation links: "Categories", "Ready to Ship", "Trade Shows", "Services", "Membership", and "Help". On the far right of this row is a "Get the App" button.

The main product listing is for "Fructose Rice Syrup for Honey (BS SMR TMR TLC C3 C4 C13 test pass F55 F48)". It features a video player showing a glass jar with a lid being opened. The price is listed as "\$500.00 - \$750.00 / Metric Tons | 1 Metric Ton/Metric Tons (Min. Order)". There are buttons for "Contact Supplier" and "Leave Messages". The supplier is identified as "CN Hangzhou Zixiang Sweet Co., Ltd." with a 4-year business history, an 83.3% response rate, and a 100.0% on-time delivery rate. A "You may like" section at the bottom right shows a similar product with a price range of "\$500.00 - \$800.00 / Metric Ton".

Alibaba.com Global trade starts here™

Products ▾ What are you looking for...   Search  Sign In
Join Free  Messages


Categories ▾ Ready to Ship Trade Shows Services ▾ Membership ▾ Help ▾ Get the App







  View larger image

#SUPERSEPTEMBER Fructose Rice Syrup for Honey (BS SMR TMR TLC C3 C4 C13 test pass F55 F48)


FOB Reference Price: [Get Latest Price](#)




\$500.00 - \$750.00 / Metric Tons | 1 Metric Ton/Metric Tons (Min. Order)

 **Trade Assurance** protect your orders from payment to delivery


Payments:  **VISA**  **Online Bank Payment**  **T/T**  **Pay Later**  **Western Union WU** 


Alibaba.com Logistics · Inspection Solutions

 **CN Hangzhou Zixiang Sweet Co., Ltd.**


4YRS   



Manufacturer, Trading Company

 **83.3%** Response Rate

 **100.0%** On-time delivery rate

You may like

 high fructose/glucose/maltose
\$500.00 - \$800.00 / Metric Ton

 Add to Compare  Share

- It is interesting and alarming that Chinese sellers using the Chinese conglomerate Alibaba website extensively advertise modes of production of adulteration of honey which “elude detection by U.S. governmental authorities, including the U.S. FDA and U.S. CBP.” The arrogance and blatant defiance are monumental.
- Recommendations by Chinese sellers are explicitly asserted that importers buying Chinese “honey” use should utilize official U.S. Customs categories such as “paint pigment” for “honey”. (This was noted by Dr. Peter Awram of Canada at Apimondia, 2023).
- Legal experts have pointed out that international Customs Fraud involves not only fraudulent country of origin but also entering products using false categories.

- China and India have huge populations of at least 1.3 and 1.4 billion people respectively. Both cultures revere honey.
- During the U.S. antidumping case against honey from China, the U.S. Department of Commerce was mandated to calculate antidumping duty rates based upon Indian prices. This was extremely difficult because India had exported no honey to the world previous to 2001.
- Indian exports of honey exploded after China was precluded from the U.S. market by high antidumping duty rates.
- In China, the Chinese press exposed a high percentage of adulterated honey in the domestic consumer marketplace. Some reports described 70% of honey in Chinese supermarkets to be adulterated.
- Indian beekeepers have also decried the presence of adulterated honey in their domestic marketplace (Down to Earth magazine report).

Indian Honey Adulteration Techniques-2020

The Honey Trap

Investigation into the business of adulteration of honey

[NEXT NEWS >](#)

By [Amit Khurana](#), [Arnab Pratim Dutta](#), [Sonal Dhingra](#)

Published: Wednesday 02 December 2020



This story begins in the mustard fields of north India where beekeepers are getting ready for the next honey season. When the yellow flowers are in bloom, the bees suck the nectar and bring us goodness in the form of honey, which we then consume because of its many beneficial properties. We were alerted that beekeepers from this region and other parts of the country were in deep distress

— they had reached the point where their business had turned unprofitable in the past few years. Prices of raw honey had crashed like never before.

But why? We asked. After all, the sale of honey is booming — the threat of COVID-19 infection has made people consume more because of its anti-microbial and anti-inflammatory properties. Drinking a glass of water with honey and lime has become the practice for millions of households.

- Some of the modern modes of adulteration that originated in China were developed because after formation of the People's Republic of China some Chinese officials wanted to produce a large amount of honey which could be sold to the masses in China at low prices. The lack of meaningful standards for honey came about for this purpose. Of course, China can make their own standards for this product being sold within China.
- This product should not be exported to the international market as honey, just as "honey" processed with resin technology cannot be properly described as honey.
- China is seeking to internationalize its own weak and deceptive "standards." The motive is to keep open and expand its dominance of international markets. Their nationalistic goal should not be at the expense of world beekeepers and global consumers. China's effort to control international honey standards should be resisted.

- China's attempt to intrude as a controlling decision maker, in the typical top down Chinese fashion, is expressed in the arguments made at the ISO meeting in 2018, and elsewhere:
- Speakers more or less openly explained that they wished to continue harvesting immature honey.
- This mode of adulteration, which the Chinese want to attain international approval, has devastating consequences. Those consequences derive from the fact that this mode of adulteration exponentially increases the quantities of pseudo honey produced and collapses the cost of production.

- Prof. Enrique Bedascurrabure of Argentina is an expert on the production of honey in tropical and semi-tropical countries. Prof. Enrique has confirmed that it is perfectly possible to produce and harvest fully ripened honey in tropical and semi-tropical regions. Producing such requires more time, yields smaller quantities, and the costs of production increase. He can be an important contributor to the scientific refutation of arguments for tolerating the harvesting of unripe honey.
- When Nuclear Magnetic Resonance analysis was first applied to honey, Dr. Gudrun Beckh pointed out that the NMR profiles of immature honey mirrored the profile of nectar. That mirror revealed what was absent but essential to a product being authentic honey produced according to the Codex definition.

Multiple Tools

- The detection of honey adulteration requires multiple and sophisticated tools. It is also essential that the right tools are used in the right way. These sophisticated tools are essential to perform correct diagnosis of the problems. Such tools exist.
- It is essential to understand that the deception is evolving and we must be as nimble as the perpetrators are clever.
- Just as a surgeon must have in his or her medical toolbox multiple instruments, so too must those fighting adulteration. But the right tools must be chosen and utilized to perform a correct diagnosis. If a brain surgeon uses surgical tools of the heart surgeon, or vice versa, the operation will not be successful.

- Beekeepers in the U.S. promoted a bill which required U.S Customs to utilize NMR testing for honey, and it was passed.
- Currently the US FDA is using SCIRA adulteration testing and residue testing for antibiotics and pesticides.
- Adulteration of honey needs to be judged by both what should be present but is not, and what is present but should not be. Many private laboratories miss this point.

- The French beekeeping community and its leaders, including Mr. Joel Schiro, must be commended.
- We are very appreciative of the opportunity to discuss these matters with the Joint Research Center and the European Commission.
- The adulteration of honey is an international phenomena. Just as in astrophysics, particle physics and genetics, progress increasingly depends on international collaboration. Within that international cooperation, European scientists and officials are playing the most decisive, creative and principled role.
- For that we thank you.