CONCERNS AND RECOMMENDATIONS WITH RESPECT TO THE IMPORTATION OF HONEY INTO TRINIDAD AND TOBAGO

Presented to

Permanent Secretary
Ministry of Trade, Industry, Investment and Communications

April 10 2015
Executive Summary

The prohibition of honey imports into Trinidad and Tobago has been a contentious issue for member states of the Caribbean Community for quite some time. The Government of Trinidad and Tobago, in response to entreaties through Caricom’s Council for Trade and Economic Development (COTED), issued a release stating its intent to “remove the total ban that currently exists in respect of the importation of the product (honey) and concurrently introduce the necessary safeguards to ensure the continued existence and development of the local industry.”

The Federation of Independent Apiculture Associations and Cooperatives (FIAAC) sought and obtained an audience with an inter-ministerial team to discuss issues related to the importation of honey into Trinidad and Tobago. FIAAC was requested that submit a paper outlining its concerns and recommendation.

Beekeeping has been an integral part of the Trinidad and Tobago’s agricultural landscape for over one hundred years. In 1935, during a period when there were significant exports of honey from Trinidad and Tobago to the United Kingdom, the then colonial government made a major policy statement with the passage of the Beekeeping and Bee Products Act. The Act sought to regulate and control beekeeping, amongst other things, and expressly prohibited the importation of honey into Trinidad and Tobago.

Trinidad and Tobago exported honey to the UK from around 1914 to 1958. Exports stopped when honey prices fell following the introduction of beet sugar in Europe. The arrival of the Africanised honey bee in 1979 signalled the start a period of decline in the beekeeping sector in Trinidad, a trend that was acerbated by the dismantling of the Apiaries Unit in 1988. The decline continued throughout the period to 2008 and has apparently bottomed-out since. Beekeeping in Tobago remained relatively steady during the 80’s and 90’s, peaking in 2000, before declining steadily thereafter for the next eight years following infestation of colonies by Varroa mite. Data suggest that the decline in beekeeping on both islands has levelled off and that a turnaround has begun in Trinidad, more so than in Tobago.

Against that background, the concerns of beekeepers, as expressed through FIAAC with respect to the importation of honey into Trinidad and Tobago were categorised according to the potential impact of honey imports, and are presented under four headings:

- Impact on honeybees through the spread of pathogens, pests, parasites, and diseases
- Impact on human health
- Impact on the natural environment
Concerns and recommendations with respect to the importation of honey into Trinidad and Tobago.


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- Impact on the economy.

Recommendations flowing these concerns are as follows:

i. Government should revisit its stated intentions regarding the prohibition of honey imports into Trinidad and Tobago.

ii. Government should undertake “due diligence before formulating a policy position regarding the beekeeping sector, particularly where, as in the instant case, the position being contemplated has the potential to further under develop an already under developed beekeeping sector.

iii. Government should defer plans to remove the prohibition on honey imports, subject to the implementation of strategies, programmes, and projects, to develop the sector, as outlined by (i) the Economic Development Board in its paper “The Development of the Honey Industry in Trinidad and Tobago”, and (ii) the Inter-American Institute for Cooperation on Agriculture in its preliminary report on “Trade in Honey in Trinidad and Tobago”.

iv. Government must engage the national beekeeping community in meaningful consultation on all public policy matters that directly impact the national beekeeping sector.

v. Enforcement of Provisions of the Beekeeping and Bee Products Regulations as it related the prohibition on honey importation.

vi. The convening of a Caricom Honey Trade Workshop to examine the wider issue of honey trade in the Caricom Community.

vii. In the event the government does not accept the recommendation at (i) to (vi) and decides to pursue legislative action to remove the prohibition on the importation of honey, several factors directly related to honey trade should be considered.

viii. In light of recommendation (vii) FIAAC affirms its unequivocal preference for recommendations (i) to (vi) as priority recommendations and wishes to underscore that nothing written in this report should be interpreted to mean that FIAAC will support government’s removal of the prohibition on the importation of honey on the basis of recommendation (vii).
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CONCERNS AND RECOMMENDATIONS WITH RESPECT TO THE IMPORTATION OF HONEY INTO
TRINIDAD AND TOBAGO

1.0 Introduction

The prohibition of honey imports into Trinidad and Tobago has been a contentious issue for member states of the Caribbean Community for quite some time. Subsequent to the liberalisation of trade amongst member states of the Community, the Government of Trinidad and Tobago, in response to entreaties through Caricom’s Council for Trade and Economic Development (COTED), issued a release on its position on the local honey industry. The release stated government’s intent to “remove the total ban that currently exists in respect of the importation of the product (honey) and concurrently introduce the necessary safeguards to ensure the continued existence and development of the local industry.”

Members of the national beekeeping community under the Umbrella of the Federation of Independent Apiculture Associations and Cooperatives subsequently sought and obtained an audience with an inter-ministerial team headed by the Minister of Trade, Industry, Investment and Communications and the Minister of Food Production. By letter dated March 17, 2014, the Ministry of Trade requested that FIAAC submit a paper outlining its concerns and recommendation with respect to the importation of honey into Trinidad and Tobago.

2.0 Background

Beekeeping has been an integral part of the Trinidad and Tobago’s agricultural landscape for over one hundred years. Honey bees were reportedly first managed in Trinidad in 1901 and several years later in Tobago.

The Beekeeping and Bee Products Act of 1935, sought to regulate and control beekeeping, the importation or exportation of bees, bee products and bee supplies, and to prevent the introduction and spread of bee diseases. Regulations made under Act expressly prohibited the importation of honey into Trinidad and Tobago. The Act was a major policy statement on the beekeeping sector by the then colonial government.

3 A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.
It could not be ascertained what led to the passage of the Beekeeping and Bee Products Act. At that time there were significant exports of honey from Trinidad and Tobago to the United Kingdom. Inferences, based in internet research, is that the Act may have been well intended ‘copy-cat’ legislation in the wake of the outbreak of the Isle of Wright disease which was thought to be responsible for death of a large number of honey bee colonies in the United Kingdom in 1906. New Zealand passed the Apiaries Act in 1908, Jamaica passed the Bee Control Act in 1918, the United States passed the Honey Bee Act in 1922, and South Australia passed the Apiaries Act in 1931.

Prior to the passage of the Act and up to the start of the Second World War, exports of honey from Trinidad and Tobago to the United Kingdom ranging from 39,252 lbs in 1923, peaking at 47,198 lbs in 1935, then falling to 12,062 lbs in 1938. Post war exports ranged from 71,177 lbs in 1947, to 23,608 lbs in 1957. Exports stopped one year thereafter when honey prices fell because of the introduction of beet sugar in Europe.4

The arrival of Africanised honey bee in Trinidad from South America in 1979 was the second major milestone in the history of the national beekeeping sector, followed in 1988 by the third major milestone; the dismantling of Government’s Apiaries Unit. The arrival of the Africanised honey bee signalled the start a period of decline in the beekeeping sector in Trinidad which was acerbated by the dismantling of the Apiaries Unit.5 Data presented at Table 1 for the thirty year period ending 2008, and data for the period thereafter suggests that the decline in the sector continued throughout the period to 2008 with an increase in the number of beekeepers and colonies being realised some time thereafter. Estimates put the current number of beekeepers and colonies in Trinidad to over 400 and 7,000, respectively.6

It was not until the identification of the Varroa mite in Tobago in 2000, and subsequent honey bee virus outbreak challenges, that the stability of Tobago’s beekeeping sector gave way to a continuous period of decline. Data at Table 2 suggests that beekeeping in Tobago remained steady during the first half of the 1990’s, then realised an upswing which peaking in 2000, before declining steadily thereafter for the next eight years.7 Data at the Division of Agriculture, Tobago, indicates that in 2014 there were 25 beekeepers and 350 colonies, suggesting that the decline in the sector had ceased as the number of beekeepers, if not colonies had increased.

4 Ibid.
5 Ibid.
6 The Development of the Honey Industry in Trinidad and Tobago, Economic Development Board, Ministry of Planning and Sustainable Development. May 2014
7 A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.
Table 1. Trinidad: No. of Beekeepers and Colonies, 1978 – 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Beekeepers</th>
<th>No. of Colonies</th>
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<tbody>
<tr>
<td>1978</td>
<td>407</td>
<td>7,060</td>
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<tr>
<td>1992</td>
<td>430</td>
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<td>1998</td>
<td>338</td>
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<td>5,575</td>
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<tr>
<td>2002</td>
<td>296</td>
<td>6,690</td>
</tr>
<tr>
<td>2008</td>
<td>300</td>
<td>6,000</td>
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Table 2. Tobago: No. of Beekeepers, Colonies, Apiaries, 1991 – 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Beekeepers</th>
<th>Male</th>
<th>Female</th>
<th>No. of Colonies</th>
<th>No. of Apiaries</th>
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<tr>
<td>1990</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>565</td>
<td>33</td>
</tr>
<tr>
<td>1991</td>
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<td>1992</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>500</td>
<td>29</td>
</tr>
<tr>
<td>1993</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>571</td>
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<td>-</td>
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<tr>
<td>1996</td>
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<td>2005</td>
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<td>421</td>
<td>35</td>
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<tr>
<td>2008</td>
<td>19</td>
<td>15</td>
<td>4</td>
<td>350</td>
<td>-</td>
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Table 3 gives a longitudinal perspective of the registration of apiary sites in Trinidad and Tobago. The data indicates that there has been a steady decline in the number of apiary sites registered over the last three decades of the last century. The 80’s and 90’s were the pinnacle decades for registering apiaries in Tobago. The corresponding period for Trinidad was the 70’s and 80’s.

Table 3. No. of Apiaries Registered in Trinidad by County, & Tobago, 1970-2004

8 A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.
9 Ibid.

Concerns and recommendations with respect to the importation of honey into Trinidad and Tobago.
Currently, there are about twelve beekeeping enterprises in Trinidad with over 300 colonies. While such operations are managed by full-time beekeepers, most beekeeping enterprises in Trinidad and Tobago are small scale, part-time operations of 10-30 colonies.\(^{11}\)

The Economic Development Board noted that the National Food Production Action Plan 2012-2015 identified honey as a “strategic crop”. Notwithstanding, the Board describe the beekeeping industry as “become virtually non-existent with few professional beekeepers remaining” and attributes “the underdevelopment of the honey industry” to several factors, with the main contributing factor being:

- neglect towards the industry such as the decentralization of the Apiaries Unit
- little reserved forage lands for beekeepers
- no testing facilities which makes it impossible for those beekeepers wanting to export honey.\(^{12}\)

### 3.0 Concerns with respect to the importation of honey into Trinidad and Tobago

Concerns were categorised according to the potential impact of honey imports and are presented under four headings:

- Impact on honeybees through the spread of pathogens, pests, parasites, and diseases

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<table>
<thead>
<tr>
<th>Island/County</th>
<th>70's</th>
<th>80's</th>
<th>90's</th>
<th>2000/04</th>
<th>Total</th>
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<tr>
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<td>33</td>
<td>25</td>
<td>7</td>
<td>69</td>
</tr>
<tr>
<td>Trinidad Caroni</td>
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<td>41</td>
<td>11</td>
<td>7</td>
<td>91</td>
</tr>
<tr>
<td>St. Andrew/St. David</td>
<td>58</td>
<td>61</td>
<td>61</td>
<td>33</td>
<td>213</td>
</tr>
<tr>
<td>Victoria</td>
<td>23</td>
<td>24</td>
<td>8</td>
<td>1</td>
<td>56</td>
</tr>
<tr>
<td>St. Patrick</td>
<td>71</td>
<td>26</td>
<td>21</td>
<td>7</td>
<td>125</td>
</tr>
<tr>
<td>St. George</td>
<td>64</td>
<td>62</td>
<td>31</td>
<td>21</td>
<td>178</td>
</tr>
<tr>
<td>Nariva/Mayaro</td>
<td>15</td>
<td>15</td>
<td>22</td>
<td>9</td>
<td>61</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>267</td>
<td>262</td>
<td>179</td>
<td>85</td>
<td>793</td>
</tr>
</tbody>
</table>

\(^{10}\) A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.

\(^{11}\) The Development of the Honey Industry in Trinidad and Tobago.

\(^{12}\) Ibid.
• Impact on human health
• Impact on the natural environment
• Impact on the economy.

3.1 Impact on honeybees through the spread of pathogens, pests, parasites, and diseases

Managed honey bees colonies are typically kept in an environment where wild honey bee populations may also be present. This complicates and often prevents the implementation of measures to control the spread of pathogens, pests, parasites, and diseases and their impact on honeybees. Even without wild bees, it is very difficult to contain the spread of pathogens and the like, since bees have a flight radius of at least three kilometres, and colonies multiply by swarming when one part of the colony leaves the old nest to look for a new dwelling. Depending on availability of the food and the density of the bee population, distances of many kilometres can be covered.\(^{13}\)

Moreover, the diagnosis and control of honey bee diseases at the colony level is quite difficult as the possibilities and the methods applied for clinical observation and diagnosis depend on seasonal conditions, and the prevalence of pathogens and potential control strategies also depend on the seasonal cycle. Additionally, traditional honey bee diseases are increasingly being found to be only one factor in multi-factorial syndromes affecting honey bee health, with honey bee nutrition, pesticide use, and environmental change being among the other factors.\(^{14}\)

Of all the pathogens, pests, parasites, and diseases that are of major concern to the international beekeeping community, only the parasitic Varroa mite is known to be currently present in both Trinidad and Tobago. Outbreaks of European Foul Brood (EFB) in Trinidad in 1990, 1994, 1996, 1998 and 2000 were reported by the former Inspector of Apiaries, who also reported an outbreak of Sacbrood (SBV) in 1989. There have been no reported outbreaks of EFB and SVB between 2000 and 2010\(^{15}\). It is believed that EFB and SVB are no longer present in Trinidad.

Given the probability that national stock of honey bees would be exposed to risks of infections by pathogens, pests, parasites, and diseases, through the import of honey, an elaboration on the potential risk agents is presented in the following paragraphs.


\(^{14}\) Ibid.

\(^{15}\) A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.
a. **American Foul Brood and European Foul Brood**

American Foul Brood (ABF) and European Foul Brood (EFB) are the main bee diseases that can be spread through the importation of honey. ABF, a bee disease of economic importance is spread by adult bees ingesting honey containing *Paenibacillus larvae* spores and transmitting the spores to young larvae at feeding, the interchange of bee equipment between hives, vertically transmission through swarming, and between colonies through robbing. The larvae spores remain infectious for more than thirty five years and can withstand heat, cold, draught and humidity. Given the probable economic impact of AFB, it was recommended that the risk of transmitting the disease AFB through trade in honey, in instances where honey was imported mainly for human consumption, should not be ignored by importing countries which have been shown to be free from AFB.16

The impact of European Foulbrood (EFB), a bacterial brood disease with a worldwide distribution, is less severe than that of AFB. EBF is transmitted by the interchange of brood combs between colonies. It was reported that honey is commonly contaminated with *Melissococcus plutonius*; the causative agent of EFB, suggesting that ‘robbing’ may contribute to the spread of the bacterium between colonies and apiaries.17

Antibiotics are generally useful for treating both AFB and EFB. Antibiotic treatment of AFB-infected colonies can eliminate all symptoms, but the disease will return when treatment is stopped because the spores are not affected by the drug. Effective control of AFB centres on destroying diseased colonies and disinfecting contaminated equipment to prevent the spread of infection. These measures are difficult to implement in most small-scale beekeeping projects. Beekeepers often sporadically apply a low drug dosage to EFB-diseased colonies. They either use too little drug in the mixture or do not treat often enough. This suppresses the disease, but it does not cure it and in doing so creates conditions where the disease organism can develop drug resistance. Improper use of antibiotics can also result in the harvested honey being contaminated by the drug or by breakdown products. Drug-contaminated honey is not pure honey, and should not be marketed as such. Antibiotics have their own side effects as well, killing good and bad bacteria thereby weakening the natural defenses of the bees.18

b. **Nosema Ceranae**

*Nosema Ceranae* is one of two microsporidian species that infect honey bees worldwide. *N. ceranae* is present on all five continents and is considered a major bee health problem. It is

16 The Spread of Pathogens Through Trade in Honey Bees and Their Products (including Queen Bees and Semen): Overview and Recent Developments. F. Mutinelli. National Reference Laboratory for Beekeeping, Istituto Zooprofilattico Sperimentale delle Venezie, viale dell’Università 10, 35020 Legnaro (PD), Italy. p 258-263.

17 Ibid.

commonly accepted that the infective spores of this microsporidium can be transmitted between bees by ingestion. The role played by honey in the transmission and spread of *N. ceranae* has not yet been clarified, however it is generally accepted that the world trade in honey bee products and beekeeping materials may also play an important role in the dispersal of infective spores of *N. ceranae* from apiary to apiary over different geographical areas.\footnote{The Spread of Pathogens Through Trade in Honey Bees and Their Products (including Queen Bees and Semen): Overview and Recent Developments.}

c. **Viruses**

There are at least eighteen viruses that have been reported as being able to infect honey bees. Viruses may attack different developmental stages and castes of bees, including eggs, larvae, pupae, adult workers, adult drones and the queen of the colony. Although bee viruses usually persist as in-apparent infections, they can dramatically affect bee health and shorten the lives of infected bees under certain conditions. Two viruses; Kashmir bee virus (KBV) and Sacbrood Bee Virus (SBV), were detected in colony food, including honey, pollen and royal jelly, as well as in all developmental stages of bees, suggesting the involvement of colony food in the spread of viral infections.\footnote{Ibid.}

d. **Small hive beetle (Aethina tumida)**

The Small hive beetle; *Aethina tumida*, is a parasite and scavenger of honey-bee colonies. Adults and larvae feed on the honey-bee brood, honey, and pollen, causing the death of the brood, fermenting of honey, and comb destruction, often resulting in the full structural collapse of the nest and absconding of the colony. The small hive beetle can be a serious problem in honey-extracting facilities, where stored comb, honey and wax cappings are all potential feeding and breeding areas. The beetle is able to survive at least two weeks without food and fifty days on brood combs. *A. tumida* can be spread to previously unaffected colonies by the movement of adult bees, honeycomb and other apiculture products, as well as used equipment associated with beekeeping, Dispersal includes small hive beetles following or accompanying swarms, and by the beetle flying from up to 6 km to 13 km from the nest site.\footnote{Ibid.}

e. **Varroa destructor**

The mite; *Varroa destructor*, is a parasite of adult bees and their brood, and has a worldwide distribution, with the exception of Australia. The mite penetrates the intersegmental skin of adult bees between the abdominal sclera, and sometimes between the head and thorax, to ingest haemolymph (the bee’s blood). In addition to its direct action as pathogen, the varroa mite has been proven to be an effective vector in transmitting and activating viruses.\footnote{Ibid.}
Caribbean Note:

1. “Jamaica already has five significant beekeeping pests, which are endemic; American Foulbrood Disease (AFB), European Foulbrood Disease (EFB), Chalkbrood, Small Hive Beetle (SHB) and the varroa mite. All, except Varroa, are adequately controlled if individual beekeepers are vigilant and rigorous in their application of prescribed hive and pest management procedures.”

2. “Since 1999 a number of factors have contributed to the declining health of Grenadian honey bee colonies. These include the introduction of several honey bee pests into Grenada such as Varroa, which can damage colony health and productivity (honey production) as well as deadly bee parasites, Tracheal Mite (Acarapis woodi) and Nosema spp. Honey bees also face a number of newly introduced diseases caused by viruses, bacteria and fungi.”

3. Concrete evidence can be produced to establish that foreign honey is being sold in Trinidad and Tobago. The issue of ‘silent imports’ of honey from the region was ventilated at the First Caribbean Beekeeping Congress held in Tobago in 1998, and is documented in the proceedings of the event. The Economic Development Board also notes in its report that “Within recent times there have been imports of foreign honey into the islands which are sold at local groceries.” Further, there is also reliable local knowledge to this effect, yet it appears that there is a lack of will on the part of the competent authority to take enforcement action. The opportunity is being used to document FIAAC’s concern on this issue, given the risks which are associated with this illegal activity.

3.2. Impact on human health

It has been established that ABF and EFB are the main bee diseases that can be spread through the importation of honey, that antibiotics are generally used to treat both diseases, and that the improper use of antibiotics can result in harvested honey being contaminated by the drug or by breakdown products. The presentation in this section draws heavily on an article published in the Scientific World Journal. The Abstract and Conclusion of the article are appended as Appendix 1.
Antibiotic residues in honey have become a major consumer concern. Some drugs have the potential to produce toxic reactions in consumers directly while some others are able to produce allergic or hypersensitivity reactions. Long-term effects of exposure to antibiotic residues include microbiological hazards, carcinogenicity, reproductive effects, and teratogenicity\textsuperscript{27}. Microbiological effects are one of the major health problems in human beings. Certain drugs like nitrofurans and nitroimidazoles can cause cancer in human being. Similarly, some drugs can produce reproductive and teratogenic effects at very low doses.\textsuperscript{28}

Antibiotic residues consumed along with food and honey can produce resistance in bacterial populations. Antibiotic resistance is a global public health problem and continues to be a challenging issue. The US Centers for Disease Control and Prevention (2000) described antibiotic resistance as “one of the world’s most pressing health problems,” because “the number of bacteria resistant to antibiotics has increased, and many bacterial infections are becoming resistant to the most commonly prescribed antibiotic treatments”. The WHO has identified antibiotic resistance as “one of the three greatest threats to human health.” The primary cause is long-term exposure to antibiotics through their use as medicines in humans and animals, horticulture and for food preservation. The types of antibiotics used in animals are frequently similar to those used in humans.\textsuperscript{29}

In December 2003, a workshop convened by the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health and the World Health Organisation concluded that “there is clear evidence of adverse human health consequences due to resistant organisms resulting from non human usage of antimicrobials. These consequences include infections that would not have otherwise occurred, increased frequency of treatment failures, and increased severity of infections.”\textsuperscript{30}

\section*{3.3 Impact on the natural environment}

Bees are a natural resource, freely available in the wild. Bees collect pollen and nectar where they can, so beekeeping is possible in cultivated or wasteland areas, even when such areas are arid and conditions marginal. Bees are also the only livestock capable of harvesting nectar and pollen, there is no competition with other animals and without bees these valuable resources would not be harvested. In fact bees help to maintain biodiversity through their symbiotic

\textsuperscript{27} Teratogen; any substance, organism, or process that causes malformations in a fetus. (Collins English Dictionary).


\textsuperscript{29} Ibid.

\textsuperscript{30} Ibid.
relationship with flowering plants that require insect pollination; one cannot exist without the other.\textsuperscript{31}

Beekeeping can provides an excellent bonus crop in addition to, but not instead of, other crops. The extra-remarkable aspect of beekeeping is that it ensures the continuation of natural assets and future generations of food plants by the pollination of wild and cultivated plants. In that regard, beekeeping actually helps to sustain the natural resource base. In fact the agronomic, environmental and economic value of this service rendered by honey bees is many times greater than the value of the bee products produced, and is a critical ecosystem service.\textsuperscript{32}

Honey bees are an introduced species to the Western Hemisphere, so too are many cultivates plant species that are dependent on the pollination services provided by honey bees. Without the pollination services provided honey bees these introduced species could not have survived. Globally, the current context is one where the demand for honey bee pollinated crops is increasing more rapidly than is the population of honey bees, and as a result, increasing demands are being placed on existing honey bee populations\textsuperscript{33}.

While the focus of this paper is on honey bees, recognition must be given to Trinidad and Tobago’s endemic, indigenous bees, referred to as stingless bees. It is unclear however whether stingless bees are susceptible to the threats posed to honey bees by the importation of honey, and if so to what extent. What is clear is that stingless bees are important pollinator for many endemic native floral species. In that regard reports of declining populations of stingless bees in north-eastern Trinidad are cause for concern. The decline has been attributed to the stingless bees’ inability to compete with Africanised bees for nectar and pollen during periods of dearth.\textsuperscript{34}

Given the distribution of apiary sites in areas with good natural vegetation cover, as shown on the map on page 10, with strong clusters in the north-east, south-west, and to a lesser extent north/north west of Trinidad and the relationships between honeybees and the environment described in the previous paragraphs, it is clear that any significant decline in honey bee population will generally have an adverse impact on Trinidad and Tobago’s biodiversity and the integrity of its natural environment.

\textsuperscript{31} The Importance of Apiculture for Rural Livelihoods. \url{ftp://ftp.fao.org/docrep/fao/012/i0842e/i0842e05.pdf}
\textsuperscript{32} Ibid.
\textsuperscript{34} David Rostant. TrinBago Stingless Beekepers Network. Phone conversation. January 2015.
3.4 Impact on the economy

While it is possible to quantify the economic value of honey produced, an accurate estimation of the value of the complex and multifaceted services provided by honey bees is virtually impossible. Hoopingarner and Waller surmised that if the value of bees was taken to be based on the fruits, vegetables, and seeds resulting directly from pollination, the value would be about 150 times the value of honey and bees wax. They noted that the value of beekeeping in fact extended beyond the value of the crop resulting from bee pollination, as in the case where bees pollinated alfalfa seeds, which were a valuable commodity. Alfalfa seeds produce

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35 A Comparative Analysis of two Beekeeping Communities: Tobago Apicultural Society and the Association of Professional Beekeepers.

hay, which in turn is used to produce meat and milk. When examined, all such contributions were found to account for about one third of the United States total diet that came directly or indirectly from bee pollinated crop plants. Hoopingarner and Waller found it impossible to accurately estimate the value of the ‘whole complex’ taking into account the pollination of wild flowers, weeds, trees, and other non crop plants, their contribution to the sustenance of wildlife and the natural environment, and the aesthetic value that is added to the natural ecosystem.36

Clearly there is an economic cost to reductions in honey bee populations that may result from the importation of honey. While the resultant cost of all known tangibles may be determined, it would be impossible, as noted in the previous chapter, to quantify the impact of reductions in honey bee populations on even the most significant economical value of beekeeping; pollination, not to mention the intangibles and items that are of aesthetic value, such as a blossoming tree, a flower carpeted landscape or the spectacle of a swarm of bees in flight.

4.0 Recommendations

i. **Government should revisit its stated intentions regarding the prohibition of honey imports into Trinidad and Tobago.**

Government’s stated intention to “remove the total ban that currently exists in respect of the importation of the product (honey) and concurrently introduce the necessary safeguards to ensure the continued existence and development of the local industry”, could at best be described as epigrammatic, oxymoronic, and paradoxical. The policy intent reveals a lack of understanding of the status of the beekeeping sector and its developmental requirements. It is analogous to a skydiver jumping off a plane without a parachute while others are simultaneously introducing “safeguards” to ensure his/her smooth landing.

Given the current status of the national beekeeping sector, removing the ban with respect of the importation of honey and concurrently introduce the necessary safeguards to ensure the continued existence and development of the local industry are clearly mutually exclusive events. In that regard Government should revisit its stated intent.

ii. **Government should undertake “due diligence before formulating a policy position regarding the beekeeping sector, particularly where, as in the instant case, the position being contemplated has the potential to further underdevelop an already under developed beekeeping sector.**

36 Ibid.

Concerns and recommendations with respect to the importation of honey into Trinidad and Tobago. Prepared for the FIAAC, by Gladstone Solomon. April 2015.
Given the role of the Economic Development Board, its description of the national honey industry as being underdeveloped cannot be overlooked. Nor can the Board’s recommends that the government should focus, in the first instance, on the local supply of honey and the development of the honey sector into a small scale niche industry by:

- Focusing on the increase in honey production to satisfy local demand
- Provide educational training courses for beekeepers which include technical training, business training, marketing/branding
- Facilitate the production of local beekeeping equipment
- Restrictions on the imports of bee products
- Setting up local testing facilities to ensure local honey remains of a high quality
- Connecting beekeepers to the government so that there will be a more efficient flow of information from the local industry to the government and vice-versa.

FIAAC endorses and the recommendations the Board contained in its paper titled, “The Development of the Honey Industry in Trinidad and Tobago”, dated May 2014, and recommends that these be considered as an outcome of a due diligence strategy for the development of the national honey industry/national beekeeping sector.

FIAAC also endorses, with amendments, the strategy for moving forward proposed by the Inter-American Institute for Cooperation on Agriculture (IICA), in its exploratory mission’s preliminary report titled “Trade in Honey in Trinidad and Tobago”, dated December 2014. IICA’s strategy for moving forward posits that three main issues be address in the short-term:

- Updating of the Beekeeping and Bee Products legislation.
- Conducting a baseline survey of bee pests and diseases in Trinidad and Tobago
- Conducting a risk analysis to determine the conditions of entry of honey and honey products into the country.\(^{37}\)

IICA advises “that these initial actions are very important and necessary and should be satisfactorily completed before any importation of honey or honey products is considered.” (my emphasis).

\(^{37}\)
FIAAC recommends that a fourth action; a review of the structure and conduct of the beekeeping sector, be added. This review should precede the updating of legislation, and used to inform same.

iii.  **Government should defer plans to remove the prohibition on honey imports, subject to the implementation of strategies, programmes, and projects, to develop the sector, as outlined by (i) the Economic Development Board in its paper “The Development of the Honey Industry in Trinidad and Tobago”, and (ii) the Inter-American Institute for Cooperation on Agriculture in its preliminary report on “Trade in Honey in Trinidad and Tobago”.

The growth potential of the national beekeeping sector is well recognised by the Ministry of Food Production; Ministry of Trade, Industry, Investment and Communications; Ministry of Finance, and the Inter-American Institute for Cooperation on Agriculture, amongst others ministries and agencies. Government has a central role to play in the sector’s realisation of its potential. Overtures to government in that regard have been effectively ignored to the extent where the sector has been in decline for over thirty years, while the demand for its primary product (honey) remain significantly unsatisfied, resulting in price escalation, and more recently, regional demands for access to Trinidad and Tobago’s market.

Given the status of the sector, government’s proposed solution to this ‘long-in-the-making’ scenario, of removing the prohibition on imports, is at best, a short-term fix that could potentially:

- further underdevelop an already underdeveloped beekeeping sector
- adversely compromise public health
- negatively impact biodiversity.

iv.  **Government must engage the national beekeeping community in meaningful consultation on all public policy matters that directly impact the national beekeeping sector.**

Beekeepers, by the very nature of their vocation, facilitate the delivery of a ‘public good’ in the form of pollination and other intangible services delivered by bees. The value of those services, while impossible to quantify, is widely acknowledged as being significantly in excess of incomes generated by beekeepers from hive products and services. It would therefore be appropriate for beekeepers to be accorded a level of recognition that is commensurate with the importance of the services they provide, or that at least shown an appreciation of same in the overall
scheme of things. This could be achieved by engaging beekeepers, through their representative body, in discussions to inform public policy formulation on matters that directly impact the beekeeping sector, since beekeepers are indeed the sector’s primary stakeholders.

v. **Enforcement of Provisions of the Beekeeping and Bee Products Regulations as it related the prohibition on honey importation.**

The sale of foreign honey in Trinidad and Tobago is an illegal activity that is inimical to interest of national beekeeping sector. It appears that the state is reluctant or lacks the will to address the burgeoning issue of the ‘silent’ import of honey, and by its inaction, is inadvertently facilitating the exposure of the national community to risks associated with the importation of honey, previously identified in this paper.

vi. **The convening of a Caricom Honey Trade Workshop to examine the wider issue of honey trade in the Caricom Community.**

Government’s intent to take legislative action to permit the import of honey into Trinidad and Tobago, inadvertently speaks to the wider issue of honey trade within the Caricom Community, as well as honey trade between members of the Community and countries outside the Community. And, as such, a Community wide, rather than just a national approach is required in treat with the general issue of honey trade.

IICA’s report that Trinidad and Tobago is under considerable pressure to allow imports of honey from Grenada and other Caricom Member States, supports the submission that the issue is wider than the import of honey into Trinidad and Tobago.

Against this background the FIAAC and the Association of Caribbean Beekeepers Organisations (ACBO) conceptualised and now recommends that a **Caricom Honey Trade Workshop** be staged in Trinidad and Tobago, in collaboration with the government, key regional institution such as, Caricom Secretariat, IICA, and UWI, amongst other agencies.

The objective of the workshop is to seek consensus on issues related to intra and extra regional trade in honey. The expected outcomes of the workshop are policy and strategic perspectives on honey trade that would optimally contribute to the wider goal of ensuring the sustainability and competitiveness of the national and Caribbean beekeeping sector. A proposal Caricom Honey Trade Workshop is appended at Appendix 3.
vii. In the event the government does not accept the recommendation at (i) to (vi) and decides to pursue legislative action to remove the prohibition on the importation of honey, the following factors directly related to honey trade should be considered:

- The Caricom Regional Standard Specification for Honey CRS 18: 2011, approved at the 33rd Meeting of the COTED in November 2011. The Standard is flawed; it lacks objectivity in the criteria used to grade honey.
- Facilities to determine the basic parameters for honey; moisture, distase and HMF (Hydroxymethylfurfural), and to test for and monitor residue contaminant in honey will be required.
- Geographic and botanical based traceability systems/indicators to determine points of origin of honey must be developed/identified.
- Possible deleterious impacts on the natural environment
- The need to install sanitary and phytosanitary (SPS) measures to protect human, bee and plant life/health against risks arising from imported honey.

viii In light of recommendation (vii) FIAAC affirms its unequivocal preference for recommendations (i) to (vi) as priority recommendations and wishes to underscore that nothing written in this report should be interpreted to mean that FIAAC will support government’s removal of the prohibition on the importation of honey on the basis of recommendation (vii).
5.0 Bibliography


The Development of the Honey Industry in Trinidad and Tobago, Economic Development Board, Ministry of Planning and Sustainable Development. May 2014.


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The Importance of Apiculture for Rural Livelihoods. 


Appendix 1

http://dx.doi.org/10.1100/2012/930849.

Review Article

Antibiotic, Pesticide, and Microbial Contaminants of Honey: Human Health Hazards

Abstract

Agricultural contamination with pesticides and antibiotics is a challenging problem that needs to be fully addressed. Bee products, such as honey, are widely consumed as food and medicine and their contamination may carry serious health hazards. Honey and other bee products are polluted by pesticides, heavy metals, bacteria and radioactive materials. Pesticide residues cause genetic mutations and cellular degradation and presence of antibiotics might increase resistant human or animal's pathogens. Many cases of infant botulisms have been attributed to contaminated honey. Honey may be very toxic when produced from certain plants. Ingestion of honey without knowing its source and safety might be problematic. Honey should be labelled to explore its origin, composition, and clear statement that it is free from contaminants. Honey that is not subjected for analysis and sterilization should not be used in infants, and should not be applied to wounds or used for medicinal purposes. This article reviews the extent and health impact of honey contamination and stresses on the introduction of a strict monitoring system and validation of acceptable minimal concentrations of pollutants or identifying maximum residue limits for bee products, in particular, honey.

6. Conclusion

Honey is a natural product that is widely used for both nutritional and medicinal purposes. Honey like other foods is prone to various types of contaminations and adulterations. Markets are full of unlabeled and adulterated honeys. Microbial and nonmicrobial contaminants which include pesticides, herbicides, antibiotics, or heavy metals have been reported in various honey samples all over the world. Therefore, its ingestion without knowing its source and safety might carry significant health hazards. Labeling of honey must be supported by analysis that confirms its provenance and safety. Health authorities in all nations have to introduce firm legislations and laws that control and regulate honey production, handling, and analysis to ascertain its safety. Raw honey that was not subjected for analysis or sterilization should not be used in infants. Furthermore, raw honey should not be applied to wounds or lesions without sterilization to be sure that it is safe and it also should be subjected for analysis to identity any adulteration that certainly affects its therapeutic properties. These recommendations should also be considered when other bee products such as wax, bee venom, pollen, and royal jelly are used either as dietary supplements or as medicinal remedies. Residual levels of contaminants cannot be changed through various production techniques; therefore, adequate monitoring is required. The market competition on these products imposes extra conditions that can only be ensured by complying with quality assurance and certification protocols and legislation.
Conclusions and Recommendations

Commercial Viability of an Apiary

From the financial analysis, small scale apiaries are considered to be a sound financial investment at the current present yield of 16 litres/hive/year or higher and large scale apiaries are considered to be a financially viable at yields of more than 19 litres/hive/year. Medium size apiaries are only viable at the high yields of 32 litres/hive/year. Current average yield of 16 litres/hive/year is considered to be a sustainable yield as it takes into account both ‘bad’ and ‘good’ years.

Small scale apiaries are appropriate for persons interested in beekeeping as a hobby or as a secondary income stream. Large scale apiaries are appropriate as a commercial venture.

Based upon the financial analysis, the following are recommended:

✓ The establishment of sufficient large scale apiaries to meet the domestic demand for honey. These large scale apiaries should be encouraged to increase their yields for it to be a financially viable investment.
✓ Beekeepers with medium size apiaries should be encourage to either: expand their apiaries, increase their yields per hive or form co-operatives/companies.
✓ Hobbyist beekeepers who do not wish to expand but are interested in attaining larger profits should be encouraged to form co-operatives/companies

Beekeeping Targeted for Rural Development Projects

Beekeeping takes place mainly in rural forested areas of the North Coast, North East and South West Trinidad due to the availability of nectar sources. Formal education is not required to become a beekeeper, so this industry is potentially relevant for development projects in the regions mentioned above, two of which are Growth Pole areas. Depending on the success of the local industry, consideration should be given to exports to the regional markets.
Government Involvement

The main role of the government should be to facilitate the development of the industry in the areas identified above to satisfy domestic demand, create jobs and thereby eliminate the importation of honey. The following actions are recommended:

- **Facilitate the formation of beekeepers into co-operatives.** Government should actively encourage beekeepers in forming themselves into co-operatives/companies.

- **Designate forage areas to beekeepers for rent.** Many beekeepers lack forage areas for their apiaries. The amount of forage areas are vital to the yields which are attained per hive because the large the amount of nectar sources available the higher the increased in yields and thus honey production. There should be properly designated forested areas accessible to beekeepers for which a price must be paid. These designated forage areas should be utilized for serious beekeeping and should be given out according to defined criteria, which must be met (e.g. registered beekeeper, apiary consisting of a minimum number of hives etc.).

- **Provide proper infrastructure.** As with all other agricultural sectors, proper access roads and availability of water, electricity and other basic infrastructure is needed. Without these basic necessities, production will not increase.

- **Education and Continued Support: Provide proper training courses to beekeepers.**
  
  I. **Technical training courses:** Proper management of bees and beekeeping techniques are crucial to obtaining higher yields per hive and therefore, properly structured and relevant training courses should be provided. Many beekeepers lack proper beekeeping knowledge and this is a vital aspect in developing the honey sector to a more efficient state. Included in these training courses should be the use of chemical/fertilizers and how they affect the quality of honey.

  II. **Business/finance/accounting training courses:** Training courses should not only aim at the technical aspects of beekeeping but the business aspect of it. As such, there should be specific training courses aimed at teaching beekeepers on expanding and treating their operations as businesses. In summary, the training should aim to develop business skills within beekeepers.
III. **Marketing/branding**: Beekeepers should be made aware of the value in branding/marketing their honey; how attractiveness can increase sales, how branded high quality honey can increase prices etc.

IV. **Connecting Beekeepers to the Government**: The decentralization of the Apiaries Unit within the Ministry of Food Production has led to a disconnect between beekeepers and the government. The following is recommended:

- Full time beekeeping extension officers in the county offices of each major honey producing region.
- The beekeeping associations to liaise with the Inspector of Apiaries a few times a year to discuss the developments and issues of the local beekeeping sector.

- **Requirements to attend training courses.** Many beekeepers have expressed concern about the fact that persons who currently attend training courses, attend to specifically learn how to extract honey for predial larceny purposes. In light of this, there should be some form of requirement in order to attend beekeeping courses. (E.g. must be registered as a beekeeper, proof of ownership of an apiary etc.).

- **Promote beekeeping as a viable source of income in the rural development areas.** Government should actively promote how beekeeping can add additional income as well as be a source of main income for persons in rural communities.

- **Continued Restrictions on Foreign Imports**
  Currently, it is illegal to import bee products and bee-keeping equipment into the country without approvals. This is because contaminated bee products or unclean used bee-keeping equipment can affect the apiculture industry by introducing diseases and contaminated honey can seriously affect the health of individuals.

  - **Diseases** – Currently, Trinidad and Tobago is practically free from any bee diseases which could be due to the restrictions on imports of beekeeping products. However, opening up the industry could severely impact the industry, particularly in Tobago. European bees in Tobago are susceptible to diseases. According to Solomon (2010)\(^{38}\), the **Varroa mite** which was identified in Tobago in 2000, caused severe economic impact on the beekeeping industry on that island. Furthermore, in 2003 a **Parasitic Mite Syndrome** (PMS) associated with the Varroa mite caused a 52% reduction in

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\(^{38}\) S. Gladstone, “Beekeeping in Trinidad and Tobago:1901 to 2010”, (2010)
the number of colonies on the island. In addition to these diseases, there are other diseases such as the **American Foul Brood Disease** (AFB) and the **Colony Collapse Disorder** (CCD) which is a serious threat facing the beekeeping industry around the world. Fortunately, to date, Trinidad and Tobago’s beekeeping industry has never been infected with these diseases.

- **Honey Contamination:** Antibiotics which are used to prevent bee diseases are largely found in many honeys worldwide. Some of the residues found in these antibiotics can be very harmful to human health when consumed. According to Centre for Science and Environment (CSE)\(^\text{40}\), some drugs have the potential to produce toxic reactions in consumers directly while others are able to produce allergic or hypersensitivity reactions. Additionally, the CSE states that ‘There is a need to regulate and monitor the level of antibiotics in honey as continuous long term exposure to low levels of antibiotics could in due course of time lead to antibiotic resistance in pathogenic bacteria making their treatment difficult.’ The EU has imposed ban on countries such as China, in 2000, when Chinese honey was found to contain **chloramphenicol**, a drug which has fatal side effects such as **aplastic anemia** on some individuals. A ban was imposed in Brazil when no agreement could be made in testing procedure and standards.

- **Support for the sector to be competitive:** Our local honey industry is considered to be a small scale, developing industry. Support within this sector is crucial for it to become competitive against foreign imports. Support should be focused on helping beekeepers improve supply, yields and maintain the quality of honey. The quality of our honey is an important factor in maintaining a comparative advantage over foreign honey imports.

Given that the importation of foreign beekeeping products can affect bees, beekeepers and consumers, careful consideration must be taken into account before the honey industry is allowed to be open for imports. In light of new information that the industry is at risk of being open for trade the following recommendations should be considered:

I. Standards for bee products entering the country should be developed.


\(^{40}\) Dr J. Sapna, Dr J. Nimisha, Prof. H. B. Mathur, Prof. H. C. Agarwal “CSE Study: Antibiotics Residues in Honey (2010)”
II. Enforcement of regularized testing of foreign honey and any other bee products entering the country. Any foreign beekeeping products should be certified to be clean and safe before it is allowed to enter the country.

III. There should be a restriction on the import of used beekeeping equipment.

IV. The GoRTT should be allowed to impose bans on those countries not in compliance with the rules and regulations of importing bee products in Trinidad and Tobago.

V. Support to be given to local beekeepers in order for them to be competitive with foreign honey imports.

- **Access to incentives.** Although incentives are provided, many beekeepers do not use government incentives as they have to wait a lengthy amount of time to obtain these incentives. As such, the government should provide a more efficient and effective way for beekeepers to access incentives, especially for starter colonies.

- **Beekeeping equipment.** An opportunity to develop another industry lies within the creation of beekeeping equipment. Almost all beekeeping equipment is purchased from private sellers are obtained from the US or Canada. Many beekeepers have stated that foreign equipment cannot withstand our tropical climate, deteriorating at a fast rate. Equipment made from local trees can last much longer than imported equipment. Thus, the government should consider incentives in this area to support the local manufacture of beekeeping equipment, which in turn should offer a more competitive price to the beekeepers and result in higher profits.

- **Establishment of Honey Testing Facilities**

  Honey testing facilities should be established in Trinidad and Tobago to continue to ensure the high quality of our honey as well as provide the opportunity for those beekeepers wishing to export honey. As previously mentioned, NAMEDEVCO is currently in the process of establishing a honey testing lab in Trinidad and Tobago. This lab should aim to ensure quality testing of both local and foreign honey and other bee products. Consideration for the development of testing facilities should also be given to CARIRI or other research centres that have the potential to conduct such analysis.
PROPOSAL FOR THE STAGING OF A CARICOM HONEY TRADE WORKSHOP

1.0 Background

The Revised Treaty of Chaguaramas Establishing the Caribbean Community, including the CARICOM Single Market and Economy, liberalised trade amongst member states of the Community. The Treaty’s General Provisions on Trade Liberalisation required member states to:

- “Establish and maintain a regime for the free movement of goods and services within the CSME.
- Refrain from trade policies and practices, the object or effect of which is to distort competition, frustrate free movement of goods and services, or otherwise nullify or impair benefits to which other Member States are entitled under this Treaty.
- Not introduce in their territories any new restrictions on imports or exports of Community origin save as otherwise provided in this Treaty.”

The issue of the prohibition of honey imports in Trinidad and Tobago was discussed at a meeting of the Council for Trade and Economic Development (COTED), the body responsible for the promotion of trade and economic development of the Community, in May 2013, following a submission by Grenada under the heading, Confiscation of honey exported to Trinidad and Tobago. In response, the Government of Trinidad and Tobago (GOTT) issued a release dated 6th June 2014, titled, “Government’s position on the local honey industry”, which informed that:

“Trinidad and Tobago’s commitments under regional and international agreements, namely the Revised Treaty of Chaguaramas establishing the Caribbean Community (CARICOM) and the

41 The Revised Treaty of Chaguaramas Establishing the Caribbean Community, including the CARICOM Single Market and Economy. Article 79.

Concerns and recommendations with respect to the importation of honey into Trinidad and Tobago. Prepared for the FIAAC, by Gladstone Solomon. April 2015.
World Trade Organization Agreement, obligate Trinidad and Tobago to treat with its trading partners in a particular fashion and as such Trinidad and Tobago must take the necessary steps to ensure that the Beekeeping and Bee Products Act and regulations are in compliance with its regional and international obligations. If this means that Trinidad and Tobago is required to remove the ban on the importation of honey and beeswax as currently set out in the Regulations that will have to be done.”

The release concluded that

“In order to satisfy our regional and international obligations with respect to this industry it is intended to remove the total ban that currently exists in respect of the importation of the product and concurrently introduce the necessary safeguards to ensure the continued existence and development of the local industry.”

Thereafter, a team from the Federation of Independent Apicultural Associations and Cooperatives (FIAAC) and the Association of Caribbean Beekeepers Organisations (ACBO) met with the Inter-Ministerial Team on Honey, comprising the Minister of Trade, Industry, Investment and Communication (TIIC); the Minister of Food Product Production; and the Permanent Secretaries and technical staff of both Ministries. At the meeting the Minister of TIIC informed of GOTT intent to remove the prohibition on honey imports in two phases. The first phase, which was actively being pursued, will allow honey imports from member states of the Caribbean Community, while the second phase will involve the lifting of the prohibition of honey imports from other countries.

2.0 Concerns and Issues regarding Caribbean Community Honey Trade

FIAAC’s and ACBO’s concerns, categorised according to the potential impact of honey imports were presented under four headings in the main report to which this Appendix is appended:

- Impact on honeybees through the spread of pathogens, pests, parasites, and diseases
- Impact on human health
- Impact on the natural environment
- Impact on the economy.

The following issues are additionally identified:

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43 www. news.gov.tt
The Caricom Regional Standard Specification for Honey CRS 18: 2011, “prescribes the requirements for honey produced by the honeybees Apis mellifera and Meliponini sp. It specifies three grades of honey with requirements for production, handling, packaging, labelling, analytic sampling and testing of honey that is intended or offered for sale in the Caribbean Community.”

The Standard, approved at the 33rd Meeting of the COTED in November 2011, was found to contain several flaws the most outstanding of which were:

- The lack of objectivity in the criteria to be used to grade honey as either Grade A1 or Grade A2, where the honey to be graded meets a set of analytical requirements that are applicable to both grades.
- The classification of ‘stingless bee’ honey as Grade A2, with the proviso that such honeys meet prescribed analytical requirements if it was to maintain its Grade A2 rating. The referenced analytical requirements were designed to grade honey from the bee species, Apis mellifera, a species of bee that is different to stingless bees.

Residue contaminant testing and monitoring.
A diagnostic study undertaken by Bees for Development in 2011, involving ten Caribbean countries, revealed that facilities to determine the basic parameters for honey; moisture, distase and HMF (Hydroxymethylfurfural) are available in Jamaica, Trinidad and Tobago, and Grenada. The study noted that it would not be cost effective for each country to have their own facilities for testing residues in honey and that the need to establishment of such laboratories within the region should be rationalised.

Traceability
Traceability systems, a central requirement of a honey trade protocol, are not established in the region. These systems include the use of geographic and botanical indicators such as, pollen indices for nectar derived from floral sources, to determine points of origin of honey.

Sanitary and Phytosanitary (SPS) Measures
SPS measures, intended to protect human, animal and plant life or health from risks arising from imported goods, are also a central requirement of any contemporary honey trade

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3.0 Need for a Caricom Honey Trade Workshop

The presentation in the preceding paragraphs, speaks to a wider issue of the need to rationalise the honey trade within the Community, as well as honey trade between members of the Community and third states. A Community wide, rather than a national approach is required.

Accordingly, FIAAC and ACBO proposes the staging of a CARICOM Honey Trade Forum, as a matter of priority in 2015. The objective of the workshop is to seek consensus on issues related to intra and extra regional trade in honey. The expected outcomes of the workshop are policy and strategic perspectives on honey trade that would optimally contribute to the wider goal of ensuring the sustainability and competitiveness of the Caribbean beekeeping sector.

Perspective contributors/participants to the workshop from member states of the Caricom and the international community include, amongst others:

- Apimondia (International Federation of Beekeepers Organisations)
- Association of Caribbean Beekeepers Organisations
- Beekeeping Organisations in Caribbean member states
- Caribbean Agricultural Research and Development Institute (CARDI)
- Caribbean Development Bank (CDB)
- Caribbean Environmental Health Institute (CEHI)
- Caribbean Food and Nutrition Institute (CFNI)
- Caribbean Regional Centre for the Education and Training of Animal Health and Veterinary Public Health Assistants (REPAHA)
- CARICOM Regional Organisation for Standards and Quality (CROSQ)
- Caricom Secretariat
- Inter-American Institute for Corporation on Agriculture (IICA)
- Ministries of Agriculture/Food Production; Trade/Industry; of Caribbean member states
- National Standards Agencies
- Regional arms/representatives of the UNDP, FAO, WTO, OIE
- University of the West Indies (UWI).