

# Improvements to the Regulations on Organic Farming to Facilitate the Practice of Organic Beekeeping

Andreas Thrasyvoulou, Ulrich Broecker, Tananaki Chrysoula, Miguel Vilas-Boas, Klaus Wallner, Thomas Amsler, Sandra Garces, Marco Lodesani, Adrian Siceanu, Ansgar Westerhoff, Dany El-Obeid

Apimondia Working Group on International Organic Standards for Bee Products

## Introduction

Good beekeeping practices, or the principles that should be followed by all beekeepers, are:

- The use of young and productive queens
- The ensuring of good pollen and nectar sources
- Access to *clean* water
- Feeding the bees when it is necessary Regular replacing of combs
- Manipulating of bees with methods that cause them least stress
- Feeding or leaving sufficient reserves of honey and pollen for the dearth period The taking of precautions against bee diseases
- The proper use of pharmaceutical products The wholesome handling of bee products
- The choice of a location suitable for the bees' needs.

Good beekeeping practices should be mandatory for anyone who wants to work professionally with honeybees. The way that one person treats their bees affects neighbouring beekeepers. A careless beekeeper who has: drones of low vitality, of an aggressive race, of a non-producing line, a line sensitive to diseases from a may mate with, the queens of a careful beekeeper and negatively affect them. If some colonies are carelessly treated with antibiotics robbing may cause dispersion of the antibiotics to neighbouring beekeepers (Reybroeck, 2010, Karazafiris et al 2011). Such carelessness may also spread disease. If bees are not provided

with water by a bad beekeeper those bees will be a continuous nuisance to all other beekeepers in the area. Some people start beekeeping with other motivation rather than love, passion and respect for bees. Very often they get disappointed and they abandon their bees which become a source of disease contamination for other bees in the surrounding area.

Organic and non-organic beekeeping (conventional) based on the above mentioned good beekeeping practices ensure healthy bees, good quality and safe products for the consumers.

Organic beekeeping differs from conventional beekeeping in that it follows certain rules, has certain restrictions and needs certification from authorities and control bodies (Reg. No 834/2007 and Reg. No.889/2008). The major restrictions are on:

- The placing of apiaries
- The substances that are used to control bee diseases
- The replacing of combs during the conversion period
- What can be fed to the bees and when such feeding is allowed.

There are also other restrictions *not* apparently so important: such as the forbiddance of clipping the wings of queens, not destroying drone brood or not extracting honey from brood combs.

The Council Regulation (EC) No 834/2007, on organic production and labelling of organic products and the Commission Regulation (EC) No 889/2008 which lays

down rules for the implementation of Council Regulation, contain obscurity and restrictions that need to be clarified or amended to further improve and encourage beekeepers to practice organic beekeeping.

## The Siting of the Apiaries

The siting of apiaries is one of the most important requirements for organic beekeeping. According to Article 13 of Reg. 889/2008:

*The member states may designate regions or areas where beekeeping complying with organic production rules is not practicable.*

This “may” of the regulation allows the country’s authorities alternative solutions. As a matter of fact, in very few countries, if any, have authorities issued a map or designated areas where organic beekeeping could not be practiced. For example, there are designated regions in Germany where organic beekeeping is not feasible because of the intense use of pesticides on rape (canola/colza). The alternative solution is given in Article 78 that states:

*Where no areas are identified by the member states, the beekeeper shall provide the control authority or control body appropriate documentation and evidences including suitable analyses that the areas meet the conditions required by the regulation.*

The “may” now becomes “shall” and the general “designate regions” become

“appropriate documentation” But yet the provisions of the regulation say nothing about what documentation, what evidence or what analyses beekeepers should provide to the authorities, although these requirements are substantial, for the further practicing of organic beekeeping. This is unrealistic since beekeepers cannot provide a complete analysis of likely suspected contamination of quite a number of present pesticides – this can hardly be achieved, especially in view of the costs involved.

Further study of the regulations regarding the places where organic apiaries should be situated, draws attention to Article 13 which says:

*The sitting of the apiaries shall be such that, within a radius of 3 km from the apiary site nectar and pollen sources consist essentially of organically produced crops and/or spontaneous vegetation and/or crops treated with low environmental impact methods which cannot affect the qualification of beekeeping production as being organic .*

This is irrelevant as the flight range of bees can exceed that distance in the case of attractive forage sources (Ribbands 1953). Even in this case the regulation does not say how to qualify the beekeeping production as organic? Of course, one could easily say that organic production is that production that is free from contamination by agrochemicals that are used in areas where bees forage. In other words bee products should not have detectable amounts of pesticides, herbicides, fungicides or other chemicals that are used in crops within a radius of 3 kms.

But still this is not applicable as there are no products completely free from residues. It is only a matter of time before techniques will be available to detect residues far below those that can be recorded today. Different labs have different detectable limits depending on their instruments. Some labs have more sophisticated equipment than others and can detect residues to lower levels. In some countries inspection authorities examine only honey but in others they examine also wax, pollen and propolis

(Bogdanov 2010). We do know that there are big differences between wax and honey regarding residues. Laws and regulations should be explicit, definite, clear and applicable to everyone in the same way and as far as this regulation is concerned it is definitely not the case.

If we accept residues as a qualification criterion of organic products, then the remaining question is: what is the sense of the 3 km radius restriction? Pesticides may be transferred through the air in shorter or longer distances and contaminate bee plants and bee products (Carson 1962, Bedos et al 2002, Karazafiris, et al 2011) or, on the other hand may not cause any contamination at all. The major source of concern is what the bees transfer into their hive and this is a measurable criterion rather than the distance from certain plants or contamination sources.

So, after the above considerations we propose to adopt the provision of Article 14.b of Reg 834/2007 as sufficient. This says:

*Apiaries shall be kept at a distance from sources that may lead to a pronounced contamination of bee products with substances harmful to human or bees health. In suspected cases a residue analysis of specific substances is mandatory. The type of analysis selected is in accordance with previous applications e.g. pesticides or antibiotic residues, or the presence of emissive sources such as e.g. motorways, industrial areas, waste dump sites.*

By this provision, regulation should also consider contamination from other sources as well, including motorways, industrial areas, waste dumps and much else not considered by Reg. 889/2008. In addition to the above amendment it should define what is the meaning of a “contaminated bee product”.

Regarding Article 78 of Reg. 889/2008, who provides the evidence and the appropriate documentation is not important it is what constitutes the evidence that matters. This unclarity should be resolved to make the regulation applicable to everyone in the same way.

### Disease Prevention and Veterinary Treatment in Organic Beekeeping

Regarding bee diseases and their control we should consider that all animals of the planet may get sick and all sick animals are eligible for pharmaceutical treatment. Bees are the exception to the above rule. When they sicken they are not eligible for any pharmaceutical treatment and the beekeeper must either find ways to control the diseases without drugs or destroy the diseased colony by fire. This is not because residues in hive products are dangerous to human health, but because the pharmaceutical companies did not apply for MRLs on products relating to the beekeeping industry as demanded by European Medicinal Evaluation Agency (EMA). Regulation No. 37/2010 actually bans all veterinary drugs that had been used in beekeeping. Varroacides were excluded. However, compounds like coumaphos, fluvalinate, amitraz and others had been approved before the establishment of EMA

So, organic beekeeping differs from conventional beekeeping by what the beekeepers use to control Varroa mites. Today there are many effective compounds that can be used in organic beekeeping. Indeed, a lot of conventional beekeepers turn to thymol, oxalic acid, formic acid and lactic acid to control Varroa because synthetic acaricides are not any longer effective.

Although, everything is clear with bee diseases and the only restriction that should have been adopted is the use of organic products instead of chemical ones against Varroa Paragraph 4 of Article 25 of Regulation 889/2008 says:

*If, despite all preventive measures, the colonies become sick or infested, they shall be treated immediately.....*

Treating diseased creatures immediately may be necessary for other animals but not for bees. Bee diseases cannot be eradicated from the hives. Beekeepers may find bee diseases in their colonies at any time, but this does not mean that they should treat their hives immediately. The strategy is to treat the bees with certain compounds and in time to keep the infestation at non-damaging levels. This is the reason why scientists have

been studying the economic threshold for Varroa. This threshold is the point when it becomes necessary to treat a colony as mite population has reached a level at which mites are still tolerated by the bees but above which there may be serious irreparable harm to the colony (Delaplane & Hood, 1999, Currie 2008). So “immediate” treatment of diseased bee colonies is unnecessary and should be deleted. Paragraph 7 of the same Article giving the organic beekeepers the right to apply chemically synthesised allopathic products against bee diseases should be also dropped. Today, there are plenty of effective organic products that can be used to control Varroa. There is no reason to open a window to chemicals while the motto of organic farming is “as natural as we can”.

### The Conversion Period and the Changing of the Combs

According to Article 38:

*Beekeeping products can be sold with references to the organic production method only when the organic production rules have been complied with for at least one year. During the conversion period the wax shall be replaced with wax coming from organic beekeeping.*

There are two methods of replacing the combs of colonies. Gradual replacement, where combs are replaced progressively within one or more years and, direct complete replacement, where all combs of a colony are replaced at once. Gradual replacement results in residues in new combs, because of the translocation of residues from old contaminated combs to the new ones (Jimenez et al 2005, Lodesani et al, 2008). This possibility significantly decreases in the direct replacement method.

The time and the method of comb replacement depends mainly on the demands of the control authorities which, in some countries, do not show much interest and this subsequently results in residues in bee products from previous treatments. Indeed, some control bodies do accept a low, but detectable, residue level at the end of the minimum conversion times, provided they are decreasing and continue to decrease significantly from audit to audit. This applies to countries with enterprises keeping

many hundreds or even thousands of colonies. An exchange of the wax in stock is not feasible within a one year period.

So our proposal for amendment to the Regulation regarding the conversion period is that:

*Beekeeping products can be sold with reference to the organic production method only when the organic production rules have been complied with for at least 12 months, all combs have been replaced and the products do not contain residues in detectable levels.*

What is a detectable level has to be defined. Is it not more realistic to find a definition for an acceptable level? What is not detectable today may be detectable tomorrow. But this applies to acceptability, as well. There are a considerable number of beekeepers who have been working close to organic rules for a long time, even before organic regulations were set up! They used to keep their wax cycle closed and applied Varroose treatment with no other substances than organic acids. So, wax from their apiaries can be considered as being of a quality not really different from that in organic beekeeping. Both are free from residues of banned chemicals. Contaminants from other sources are likely to be present in both. As a complete wax exchange is costly in terms of labour and finance we suggest accepting a (mandatory) analysis which shows no presence of banned substances at the end of the conversion time.

### Feeding the Bees

Paragraph ? of Article 19 says:

*The feeding of bee colonies shall only be permitted where the survival of the hives is endangered due to climatic conditions and only between the last honey harvest and 15 days before the start of the next nectar or honeydew flow period. Feeding shall be with organic honey, organic sugar syrup, or organic sugar.*

Bees, beside sugars, need proteins and this regulation does not take this into consideration. Pollen is also important for the survival of the bees and an amendment regarding the provision of

pollen or pollen substitutes in periods of lack is necessary. It is also necessary to allow feeding the bees with syrup during the conversion period, especially when beekeepers replace all their combs at once (direct method). To do these bees need to be fed with syrup.

What is difficult for beekeepers in many countries to accept is the fact that organic sugar is not available or even banned from being imported. Honey yields are comparatively small (e.g. 10 – 15 kg) but nevertheless crucial for the family income they cannot feed bees with their own honey. As it was possible to use (residue-free) wax from non-organic apiaries before there was an organic wax market why not suggest a special approval for producers in those countries (e.g. Egypt, Central America, African countries) as long as organic sugar is not on the market there? It would not have any impact on the bee products quality.

### Conclusions

In this review we emphasized that good beekeeping practices should be mandatory for both conventional and organic beekeepers. The adoption of good beekeeping practices for all beekeepers, organic or not organic, is more than necessary.

The distance of a radius of 3 km from the hives is unrealistic and as an alternative a certain level of contamination of honey, wax or other bee products should be adopted.

Guidance to beekeepers to treat their colonies immediately when a disease is present in a hive and give way to allopathic synthetic products as alternative solution should be reconsidered.

During the conversion period control bodies should insist on methods of replacing conventional combs that leave no residues in the new ones.

Beekeepers should offer their product as organic only after replacing all combs and have no detectable amount (needs to be defined) of residue in wax.

Sustaining the rule of acceptance for the use of “organic” wax during conversion will keep the organic producers club a privileged one.

Finally, regarding feeding, provision should be included for a proteinaceous diet in periods of dearth.

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Professor Andreas Thrasylvoulou,  
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XXXXXXXXXX  
Email:  
  
Dr Thrasylvoulou, along with the other authors constitute the Apimondia Working Group on International Organic Standards for Bee Products