



# The National Beekeepers Association of New Zealand

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## **10<sup>th</sup> July 2014 Food Standards Maximum Level of Tutin in Honey Submission by the National Beekeepers Association**

### **INTRODUCTION**

I have been requested by the NBA Executive which I am a member of, to prepare a submission on this very important issue. The NBA represents about 700 beekeeping members, and is by far the largest beekeeping organisation in New Zealand.

The first very important consideration is to protect people's health from any effect that honey may have. Obviously, honey with high levels of Tutin can have serious implications for people's health.

It is not only important to consider people's health. If anyone is made sick from eating toxic honey, it could have a very adverse effect on beekeeping profitability. It could be very damaging to sales in New Zealand and possibly overseas. It would probably not do sales of other products overseas any good either.

From studying past research, one has to recognise the potential for people to be made sick from eating honey containing Tutin.

### **RISK FACTORS**

We consider that the highest potential for people being made sick from Tutin poisoning is from small-scale beekeepers. We do believe that small beekeepers (i.e. under 10 beehives) are probably the highest risk. Under 30 beehives the risk is still high, compared with commercial beekeepers who mix large quantities of honey together. The larger the blend of honey, the less the risk is.

The third category of greatest risk is the person who has been encouraged into beekeeping by government or by the banks, with little knowledge of the dangers of Tutin. This applies especially if they get into comb honey production.

The advent of active manuka honey, often produced where Tutin bushes grow and the passionvine hopper is present, also increases the risk of toxic honey poisoning. Beekeepers now, even large commercial ones, will pack active manuka lines in relatively small packs of under half a tonne to preserve the unique activity rating of a particular honey taken off one particular site.

It is very difficult to encourage very small beekeepers to take adequate protection for themselves and the people they give honey to, or to test honey samples which cost \$115 per sample to test. One way of alleviating this problem would be to subsidise the testing of these honey samples from beekeepers. The cost now is far too high. It is very expensive for commercial beekeepers, but many hobbyists will just not do it. This immensely increases the risk of making somebody seriously sick. We suggest that this risk is far higher than the risk being avoided by lowering the maximum Tutin limits.

## **DEFINING AREAS OF RISK**

We recognise the fact that Tutin can contaminate honey anywhere in the North Island and the upper part of the South Island. The lower half of the South Island, where little Tutin bushes are growing and there are no hoppers, is of course relatively risk free. This is certainly the area which is the safest with the least risk for producing comb honey in.

We do not think that people should be able to claim there is no Tutin in their area to claim exemption from testing, particularly taking into account the amount of shifting of hives around. Often honey is taken off beehives in an area that has no relationship to where the bees gathered it. For example, large corporates and others are letting beehives fill up in one area, then shifting them by helicopters and forklifts into other areas, then taking the honey off. This can be up to 100km away.

Bees collect Tutin in hot dry conditions when no other nectar sources are freely available, therefore bees fly a long way, I suggest at least 3 km, to pick up Tutu Honeydew if nothing else is available. It is not practicable for people to thoroughly check a radius of 3 km. (2,827 hectares) for Tutin bushes and passionvine hoppers.

## **TESTING**

One should give consideration to the testing point. It would be a lot easier if we could get rapid overnight testing for Tutin. The safest place for sampling is the packing tank immediately prior to packing, but this cannot be done because of the delay of getting results back. Most people test their honey off the honey extractors which is fine, providing there is some blending done prior to taking the sample.

Over the last two years the writer of this document has only had three samples which would not have passed the new proposed regulations.

## **THE RESEARCH**

We could support option 4, where 2mg/kg is lowered to 0.7mg/kg, if we are satisfied that the research backing the proposal is sound. However, from our reading of the reports provided, we do have serious doubts.

In particular, we are concerned about the so-called “pharmacokinetic study” that seems to be the main basis for the conclusions that have been reached. We have significant doubt that it was well enough conducted to be conclusive evidence on which to base the very large proposed reduction in allowable levels.

Our concern is with the basic methodology of the study. Six healthy male volunteers is a ridiculously small sample and certainly not a fair representation of the population at large. As for the results, the consultation paper states:

*“Transient mild light headedness was report by two volunteers during the first peak, and transient mild headaches were reported by the same two subjects during the second peak.”*

From this, it was concluded that:

*“the current maximum levels are not appropriate due to the evidence that tutin can act as a neurotoxin at these levels (i.e. adversely affect brain function) as manifest in the adverse effects experienced by two of the volunteers.”*

These vague mild symptoms reported by only two out of six subjects is certainly not sufficient and reliable evidence on which to make such an important conclusion, particularly as it seems that the volunteers would have been expecting symptoms to occur. There seems to be too much likelihood that the placebo effect would have been present. Also, the stress of waiting for effects, knowing that they had ingested a likely toxin, might have in itself been sufficient to produce mild light headedness and headaches in some suggestible people.

We believe that there should have been a much larger number of subjects (perhaps up to 100), and placebo-controlled double blind testing methodology should have been used. This is the “gold standard” for testing of substances such as pharmaceuticals, and should have been used in this instance. Under this methodology, half the subjects would be given honey with tutin, and the other half would be given the same amount of tutin-free honey, with neither the subjects or the people administering the doses knowing which subjects receive which samples. This would only be revealed later after the subjects have reported their symptoms, if any. All this is of course designed to remove any possible bias due to expectation of effects by either the subjects or the researchers.

Until research of this quality is undertaken, we find it difficult to support the major and potentially expensive changes proposed.

We note in 2.2 Risk Management, recent research indicates that the current MRLS may not currently protect consumers and may result in adverse affects as observed in the current study. We would like to know the certainty that this “*may affect*”. We thought when the Tutin standards were brought in that they were 100 times higher than what was expected to kill a person. Has this earlier research now been disproved, and where?

We still keep it in mind that many mice/guinea pigs were killed in Trevor Palmer’s day by overdosing them with honey and we suspect some of his mice/guinea pigs also may have been allergic to honey.

## **COMB HONEY**

What particularly concerns the beekeeping industry is the lowering of the Tuten level in comb honey to 0.01mg/kg. This reduction in Tuten level in comb honey is significantly more than for packed honey. Packed honey has been decreased to one third of what was the acceptable MRL, whereas the comb honey has been decreased to one tenth of what was the acceptable MRL.

The new proposal is 0.7mg/kg for packed honey and 0.01 mg/kg for comb honey. We do not believe this increased drop for comb honey is appropriate. You are dropping it 10 times. It is now 70 times lower than packed honey. We believe that is unreasonable particularly when the method for testing cut comb is the collection of the drainings of the comb honey after it has been cut out. We suggest when you are cutting a comb the most likely proportion of the honey to have toxicity in it is the last honey that comes into the beehive (i.e. during January and February). This will naturally go towards the outside of the comb and is the area that the cutter will cut out and the honey will drain from, providing the honey for sample testing. We think there would be an adequate safety margin for comb honey if you had it at the maximum of 10 times less than for bulk honey.

We do believe that no comb honey should be produced without inspecting the residues from cutting comb honey or the taking of samples from section honey in the areas of risk, being the whole of the North Island and the upper half of the South Island.

Nobody should be able to walk an area and state it is safe to produce comb honey anywhere in the North Island or the top of the South Island, (the area is just too great), without sending samples away for testing. This should not apply to honey taken off before 31 December, which is safe to sell without testing. This is an arbitrary date set by the calendar and not by practical weather conditions. There could be very occasional years which are extremely hot and dry with no other nectar sources available to bees and an early buildup of passionvine hoppers, so this date could, after careful consideration, be moved forward to 15<sup>th</sup> December. We consider that this would rarely happen but the ability to move it forward to the 15<sup>th</sup> December on these very rare occasions, should be left available in the new legislation.

## **AUSTRALIA**

It seems a pity that we have to tie ourselves in with Australia for this type of legislation. Beekeeping is so different in New Zealand to Australia, it doesn't seem appropriate. Australia also has a lot of bee diseases that New Zealand doesn't have.

## ATTACHMENT C, CONSULTATION QUESTIONS:

We are of course talking on behalf of NBA members throughout New Zealand.

No. 1: There are some of our members who consider the area of risk should be redefined to a smaller area. We think this should be done at the same time as any new regulations are formed.

No. 5: We do not know of anybody who has been made sick from commercially packaged comb honey. I myself have packed in excess of 1000 tonnes.

No. 6: We do not believe in most businesses the cost of blending to manage Tuten levels is excessive, but the cost of testing is very significant and the time delays in getting the testing done is far too long. It makes it impossible to do it at the most appropriate time, just before packing.

No. 7: We do not know of any of our members who harvest comb honey from high risk areas at high risk times of the year. I personally have, when we produced comb honey in the North Island, down-graded comb honey when I considered the risk was high. We have produced up to 150 tonnes comb honey per year in the high risk areas in the North Island well before these regulations came in, and to our knowledge never made anybody sick. However, great care was taken with many days a week inspecting Tutu bushes for passion vine hoppers and honey dew.

No. 10: We do believe we could go with Option 4, but only if the proposed reduced maximums are better justified by an authoritative double blind study as outlined previously.

No. 11: In some areas we believe that moving the level to a lower max level could cause significant problems and considerable expense. These are predominantly early Manuka areas that produce Active Manuka Honey of very high value.

No. 12: No, because of the inadequacy of the pharmacokinetic study, we think you may have difficulty in justifying lowering the level to a third of what we currently have for bulk honey. We think you will have far greater difficulty in justifying the Tuten level for comb honey to 1/10<sup>th</sup> of what we currently have. It appears you have just arbitrarily made it very difficult to produce this fine natural product in the North Island and the top of the South Island.

No. 13: If you are truly concerned about protecting New Zealanders' health, we believe you must in some manner lower the cost of testing and carry out a significant publicity campaign about the risk of producing toxic honey at the end of December. This applies particularly in seasons which are hot and dry. This publicity campaign must be aimed at smaller new beekeepers. We suggest that you get out and do something positive – spend some money and help prevent people being poisoned.

No. 14: We believe there will be a number of our members who will be involved in a lot of blending. A few will have difficulty in meeting the lower level and will be reluctant to blend it, particularly if it is



Active Manuka Honey. It would not surprise us that this lower level will cost the NZ Beekeeping Industry perhaps 1 million dollars per year. Does the lowering of the risk justify the expenditure, particularly given the inadequate nature of the pharmacokinetic study which seems to be the main basis for the proposed change?

No. 15: We believe honey is packed at approximately the same rate per month throughout the year. Packers traditionally have five months supply of honey into the next current year, in case of a failure in the type of nectar source they are packing. This has now been increased because of the habit of holding Manuka honey for at least a year to increase its activity. So we would suggest that the amount of honey in stock at December 2014 from the previous year would probably be somewhere about 10,000 tonnes, much of it very high value Active Manuka honey. This is a large amount of stock that could be affected by any new lowering of Tutin maximums.

No. 16: No, we do not agree with having no transitional arrangements for the implementation of the proposed permanent maximum levels for honey and comb honey.

No. 17: The alternative to having no transitional arrangement is to have it coming in compulsorily in December 2015. Many people will still have stock which may have higher levels of Tutin in it than the new level will be. But these people will have to be encouraged to blend it at that stage. It all depends on the risk as to whether there is a serious real risk of making people sick, or there just may be a risk with people eating abnormal quantities of honey.

## SUMMARY

- We support testing of all bulk honey and comb honey taken from the North Island and the north of the South Island. There could be very occasional years which are extremely hot and dry with no other nectar sources available to bees and an early buildup of passionvine hoppers, so this date could, after careful consideration, be moved forward to 15<sup>th</sup> December. We consider that this would rarely happen but the ability to move it forward to the 15<sup>th</sup> December on these very rare occasions, should be left available in the new legislation.
- We could support the proposed reduction in the MRL for bulk honey, but only if the need for this is confirmed by a more authoritative double blind study.
- We are concerned that the proposed new level for comb honey is too restrictive and unjustified.
- We stress the importance of a comprehensive education and publicity programme aimed at the sources of highest risk, namely small-scale and hobbyist beekeepers and new entrants to the industry.

 Executive Member **On behalf of the National Beekeepers Association**

