

## Manuka—what's in a (common) name?

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The honey industry is currently reviewing the honey standards that were developed by the Bee Products Standards Council (BPSC) in 2003. Manuka honey, with its soaring prices, is the key honey type that has prompted this review of the current standard. As the price of generic honeys in the world hovers around US\$3,000 per tonne, manuka honey is returning the producer over US\$8,000 per tonne. The financial incentive (or perhaps imperative) to claim that one's production is "manuka" honey is overwhelming. Some years ago I quipped that without standards, New Zealand has an annual production of 9,000 tonnes (our average total honey production) of "manuka" honey.

So what is "manuka" honey and what issues are being considered when reviewing this standard?

Because we trade in a world market and wish to have our products accepted on the world stage, we need to look at international conventions for setting honey standards. The United Nations Food and Agriculture Organisation (FAO) runs a commission called the Codex Alimentarius (literally, "food code"). Most countries (including New Zealand) work with this commission to produce standards for many different foods, and these Codex standards are then incorporated into each member's own food laws as they are reviewed. The recent change of our honey standard from the old Food Regulations 1984 to the new honey standard in the Australia New Zealand Food Authority (ANZFA) food code saw the wording for the definition of honey change to almost exactly reflect the Codex wording. The Codex standard for honey can be found at: [http://www.codexalimentarius.net/web/standard\\_list.jsp](http://www.codexalimentarius.net/web/standard_list.jsp)

The key phrases in the Codex standard for defining honeys by their floral or nectar source is:

6.1.6 Honey may be designated according to floral or plant source if it comes **wholly** or **mainly** from that particular source and has the **organoleptic**, **physicochemical** and **microscopic** properties corresponding with that origin.

and:

6.1.7 Where honey has been designated according to floral or plant source (6.1.6) then the **common name** or the **botanical name** of the floral source shall be in close proximity to the word "honey".

Most of us are familiar with botanical names comprising genus and species. When we give a botanical name such as *Trifolium repens* for white clover, we are being very specific about the identification of the plant. On the other hand, a common name such as "clover" can refer to Red, White, Subterranean, Alsike and Strawberry clovers etc. Even the sweet clovers (*Melilotus* sp.) can get lumped into the "Clover" pool and in the USA, "Clover" honey is usually derived from the Melilots. When we refer to "Clover" honey, we are not specifying that it is from *Trifolium repens*.

In some areas of the South Island *Echium vulgare* is a prolific honey plant. North of Christchurch it has traditionally been called "Borage" or "Blue Borage", with one beekeeping business even being named "Blue Borage Apiaries". Marlborough, North Canterbury and Kaikoura more commonly use "Borage" for this plant, but Vipers Bugloss is the more common name in South Canterbury and Central Otago.

However, there is another plant also called "Borage" and "Blue Borage", and that is the herb *Borago officinalis*. This plant has been commercially grown in Canterbury for some years (often over 10,000 hectares) and there is usually a surplus (often considerable) of honey from this source. In the honey market, some companies market their products as Vipers Bugloss and some use Borage for honey produced predominantly from *Echium vulgare*.

So which is the true Borage, one might ask. The fact is that a common name is neither strictly right nor wrong. The following sample of synonyms for "common" demonstrate the concept: "Often met with, usual, frequent, customary, occurring frequently or habitually, most widely known, ordinary".

Very often (as in the case of Borage/Vipers Bugloss), a common name varies from region to region. In the

USA *Echium vulgare* is called “Blue Weed” and in Germany it’s “Natter Kopf”. Another good example is *Arripis trutta*, that favourite sporting fish we commonly call Kahawai. Skip across the Tasman, and it becomes Eastern Australian Salmon, but also sports a list of known aliases including Australian Salmon, Black Back, Cocky Salmon, Colonial Salmon, Buck Salmon and Bay Trout.

So we can have common names that refer to more than one species or even genus (as in the case of Borage/Vipers Bugloss), and we can have regional variances in the use of different common names for the same plant. We can also have changes in usage over time. *Echium vulgare* has been expanding its range for many years and, particularly in Central Otago and South Canterbury, this spread has been dramatic—perhaps due to one beekeeper’s strategy of throwing seeds into the local council’s roadside shingle heaps whenever he saw them! Vipers Bugloss is now becoming the more dominant of these two names, possibly because there is more of the plant in more visible areas where its common name is Vipers Bugloss. Use of the term Vipers Bugloss is possibly dominant also due to the high visibility of the “True” Borage (*Borago officinalis*) grown for seed and the resulting oil.

The other way common name usage varies is by groups of people. One group with perhaps a more technical approach or industry-specific knowledge will use a different common name to that of the wider public.

### Common name usage of “manuka”

So let’s now attempt to apply all of this to the manuka case.

To start with, “manuka” is a Maori word. When Europeans arrived in New Zealand and started to record in writing such things as botanical names, each Maori tribe in New Zealand had its own dialect with different words, pronunciations etc. According to J.T. Salmon’s book *Trees and Shrubs of New Zealand*, the naming convention for *Leptospermum scoparium* north of Auckland is kahikatoa and for *Kunzea ericoides* it is “manuka”, while elsewhere “manuka” is more common for *L. scoparium* and “kanuka” for *K. ericoides*. Other texts also have recorded differences in Maori names for both plants, as would be expected given the different tribal and regional dialects.

Incidentally, *Kunzea ericoides* was classified as *Leptospermum ericoides* up until 1983. The change was made to acknowledge that *K. ericoides* had split off from the evolutionary origin of *Leptospermums* long enough ago to warrant being placed into a different genus. There is some confusion whether both species are endemic to both Australia and New Zealand. The researcher who reclassified *K. ericoides* believed so, but others more recently believe this may not be the case. It could be that *K. ericoides* is a true endemic New Zealand species, while *L. scoparium* is merely a recently naturalised Australian immigrant! Such is the intrigue of the lumpers and splitters in the realm of evolutionary biology. Suffice to say that even at the taxonomic level, it is far from clear-cut.

A search of botanical texts reveals that the use of “manuka” is widespread and common between both *L. scoparium* and *K. ericoides*. These common names listed here are quoted in the order they are listed in the reference texts.

Allan H.H., *Flora of New Zealand*, 1961. *L. scoparium*: Manuka, Kahikatoa, Tea-Tree; *L. ericoides*: Manuka or Kanuka, Tea-Tree.

Laing and Blackwell, *Plants of NZ*, 1910. *L. scoparium*: Manuka, Kahikatoa; *L. ericoides*: Heath Like Manuka, Manuka-rauriki.

*Maori Healing and Herbal*. *L. scoparium*: Manuka, Kahikatoa, Pata; *K. ericoides*: Kanuka, White Manuka.

J.T. Salmon, *Trees and Shrubs of New Zealand*. *L. scoparium*: Manuka, Kahikatoa; *K. ericoides*: Kanuka, Manuka, Tea-tree.

*A Field Guide to the Native Edible Plants of New Zealand*. *L. scoparium*: Tea-tree, Red Manuka; *K. ericoides*: Tea-Tree, White Manuka.

*Medicines of the Maori*. *L. scoparium*: Manuka, Kahikatoa, Tea Tree, Red Manuka; *K.*

*ericoides*; Manuka, Kanuka, Tree Manuka, White Manuka.

*New Zealand Medicinal Plants*. *L. scoparium*: Tea Tree, Red Manuka, Manuka, Kahikatoa; *K. ericoides*: Tree Manuka, White Manuka, Kanuka.

R. S. Walsh, *Nectar and Pollen Sources of New Zealand*. *L. scoparium*: Manuka, Red Tea Tree; *K. ericoides*, Tree Manuka, Kanuka, White Wooded variety of Manuka, White Tea Tree.

This last reference is very significant as it gives a beekeeping perspective on historical common usage of the word “manuka”. R.S. Walsh was the honey grader for 13 years and the book was published in 1967 by the National Beekeepers’ Association. The author’s first comment under “Manuka” is, “There are some 35 species of manuka...”; that is, he lumped all the *Leptospermums* into the manuka pool (and at the time *K. ericoides* was still classified as a *Leptospermum*).

We also have to remember that less than 20 years ago, manuka honey was a low-value honey and difficult to sell. Beekeepers’ use of the term “manuka” was not influenced by points of activity or by the medicinal properties of one or the other species it came from, but rather reflected the general public’s view that it came from plants called “manuka”.

The general public’s use of the word “manuka” today shows that there is common usage of the term for both *L. scoparium* and *K. ericoides*. Phrases such as “manuka firewood” when it is often or usually *K. ericoides* firewood, and “manuka sawdust” for smoking fish bear this out. Just recently an item screened on national television news of an old roadway dug up in Dunedin during a property redevelopment there. Logs had been laid down over a piece of swampy ground to form the base of the roadway, and these were referred to as “manuka” when the size of the timber (“logs”) indicated that they were *K. ericoides*.

## Marketing of “manuka” honey

For the last 20 years or so, since the first papers were published indicating that manuka honey had a special antibacterial activity, a lot of honey has been sold as “manuka”. To date virtually all *K. ericoides* production has been sold as manuka, with little (I would suggest far less than 1%) sold as kanuka.

So back to the Codex. This standard says that we may call a honey “manuka” if the nectar comes wholly or mainly from a plant source that is commonly referred to as “manuka”. The general public think of both plants as manuka. Until recently, most beekeepers thought of both plants as manuka. Many still do. Until now, honey sourced from both plants has been called manuka honey.

So all this is pretty obvious, you might say. What’s the problem? Well, the argument goes like this. Most would agree that manuka honey has become famous for its special antibacterial activity. This activity has been defined by a small group, the Active Manuka Honey Association Inc. (AMHA), as ANY antibacterial activity (against one specific strain of *Staphylococcus aureus*, known to be a wound infection agent) that is found to be present after the sample has been treated with catalase to remove hydrogen peroxide ( $H_2O_2$ ) and tested thus at NZ Labs in Hamilton. This activity is not defined by what it is, but rather by what it isn’t. It is not  $H_2O_2$  activity.

Those marketing manuka with this property will argue that because manuka honey is famous for this property, and the price has risen for this reason, then selling manuka honey without this property is leading the consumer up the garden path. There are claims that *L. scoparium* is the only source of this special activity and *K. ericoides* doesn’t have it. But other honeys, including *Echium vulgare*, have been shown to have this activity (as defined by AMHA: that is, **not**  $H_2O_2$ ), so this not a clear position.

More concerning is the growing sentiment that any honey (including that derived from *L. scoparium*) that does not have this special activity is NOT manuka! In fact, the claim is that because it doesn’t have this unique activity, it was not produced from *L. scoparium* at all. This must be a significant concern to all manuka producers with non-active manuka sites; i.e., the great majority of them. Taking this further, some claim that any honey that has this special activity then becomes manuka. So by combining a little manuka of a high unique antibacterial activity with a lot of another, perhaps similarly coloured honey (e.g., honeydew, rewarewa), it would be OK to call this manuka in order to satisfy this argument when it clearly fails the “wholly or mainly” test in the Codex standard.

But this argument about misleading the consumer is weak to start with. Those around at the time to observe the widespread publicity that thrust manuka honey into the spotlight would remember that a potential cure for stomach ulcers was the key sound bite that captured the public's imagination. Up until then it had been a wound care dressing. But now, suddenly, there was a significant gain to be had from actually eating the product! And this gain could be demonstrated with clinical trials and laboratory tests to confirm the potency of each batch. But alas, it was not to be. The clinical trials failed to show any cure for stomach ulcers and the product's unique antibacterial activity was again reduced to the realm of a topical wound dressing—where it has stayed for the last 12 years.

At this year's NBA conference Professor Peter Molan gave a stimulating and motivational address on the current research work being done on manuka honey. All of the opportunities for use of this product's unique antibacterial properties centred around topical applications with the exception of a possibility of use against *Campylobacter* (under study).

To date there is no clinically proven benefit derived from manuka honey's unique antibacterial properties when you eat it that could not be derived from another honey with hydrogen peroxide antibacterial activity. So when it is being sold with this unique property, why is it not clearly spelt out that the only benefit the consumer is getting from this unique feature is as a wound dressing—and one that has not been sterilised for that purpose? Just who is leading whom up the garden path?

It is clear that the people marketing manuka's unique antibacterial properties have a marketing problem. What they are actually selling is a topically applied antibacterial action, but they have not positioned their brands (e.g., UMF) to stand on their own without the "manuka" name. Instead they have put all their efforts into promoting the "manuka" name such that their products are inextricably linked with it and have not clearly defined what benefits their brands actually have. This is an understandable course of action and has been a highly successful marketing strategy for some. But now there is a push to exclude the use of "manuka" from all other rightful users of this name by claiming that only UMF manuka is actually manuka, and further that any brown honey that has a UMF rating is now manuka. This has to be a cause of concern for most manuka honey producers.

## Summary

"Manuka" is a [common] name that is widely used by the New Zealand public to commonly refer to two closely related plant species, *L. scoparium* and *K. ericoides*. Honey from these two plants has almost exclusively been sold as "manuka" honey. Under the Codex standard, honey that is derived "wholly or mainly" from these two commonly named species may be called "manuka". Manuka honey with unique antibacterial activity is a subset of *L. scoparium* honey. This in turn is a subset of honey derived from *L. scoparium* and *K. ericoides*, which is commonly called "Manuka". A standard for manuka honey must use characteristics that define "manuka" honey, and each characteristic (organoleptic, physicochemical and microscopic) should be defined by a range of values that is normal for this honey type.

Whether or not a honey has antibacterial activity is a separate issue that is currently encompassed by third-party offers in the market. This must not be allowed to cloud the issue of honey identification standards.

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