

# Manuka Honey Explained

David Cramp

In the first part of this article the author looked at the confusion around manuka honey that has existed ever since it was proven to have medicinal qualities in the 1980s. Now in Part 2 he looks at how the various measures of NPA (Non-Peroxide Activity) in manuka honey that exist and whether they correlate or not.

In Part One, the terms UMF<sup>®</sup> and MGO<sup>™</sup> which are both measures of NPA (Non-Peroxide Activity) in manuka honey were compared with the NPA measurements that have the same numbering system as UMF<sup>®</sup> values that is NPA 10+ equals UMF<sup>®</sup> 10+.

So how do the two measurements correlate? Table 1 shows MGO<sup>™</sup> levels against NPA (UMF<sup>®</sup>) which are taken from the chart showing the correlation between MGO<sup>™</sup> and NPA (UMF<sup>®</sup>) (Table 2). There is also an MGO<sup>™</sup> / UMF<sup>®</sup> converter available at: <http://www.umf.org.nz/umf-trademark/methylglyoxal-npa-honey-conversion-calculator> and it is from this that the comparisons have been taken from the UMF<sup>®</sup> level in the Table 1. The average is around the 10-11+ or MGO<sup>™</sup> 263 range and the higher ratings are rare. The UMF<sup>®</sup> Honey Association has taken the lead with an international programme to ensure that both test methods – UMF<sup>®</sup> and MGO<sup>™</sup> - are accurately used and that an accurate correlation between the two is now internationally recognised.

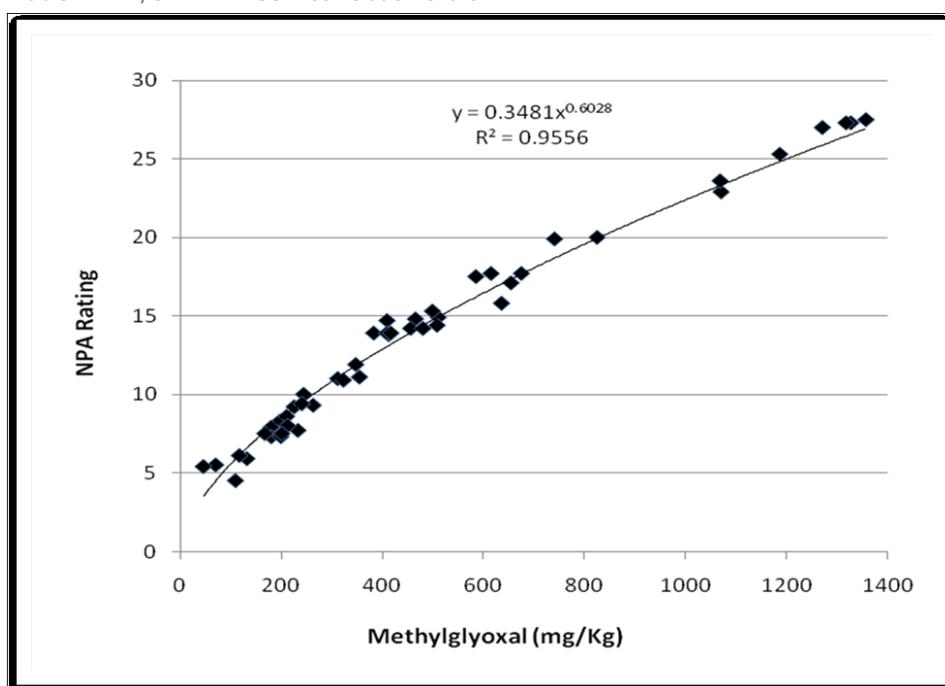
## Other ratings

There are other measurements that are on jars of manuka honey and many of these are used by perfectly respectable companies who produce good manuka honey. Those companies that use AMF and NPA ratings are often family run companies and their honey can usually be traced back to a lab certificate issued by an ISO 9001 certified laboratory.

Table 1. Showing the correlation between MGO<sup>™</sup> and NPA (UMF<sup>®</sup>).

MGO <sup>™</sup>	MANUKA HONEY BENEFIT	UMF <sup>®</sup>
83	Insignificant if any levels of activity. (Below this level, activity is undetectable).	5+>
263	Some levels of activity, used for general well-being and bodily maintenance. Most active honey is around this level of activity.	10+
514	Antibacterial activity used in prevention, and well-being.	15+
829	High activity	20+
1200	Very high activity. Rare.	25+

Table 2. NPA/UMF<sup>®</sup> – MGO<sup>™</sup> Correlation Chart



When tested independently most of these honeys are true to the label but these measurements are not regulated by any industry body.

**AMF, Active Manuka Formula:** used by some companies instead of UMF® so that there is no licence fee to the UMF® Association. AMF numbers = UMF® numbers. Not regulated.

**NPA:** we have already seen this used above, but some producer companies use this on their jars to indicate activity. NPA numbers = UMF® numbers. Not regulated.

**TA or Active:** This refers to *Total Activity* and combines the NPA and PA levels of honey. This is often represented on the label as a TA and/or a number such as TA15+. It is also displayed as just a number, 20+ for example, without any letters. Honey bought using this measurement is not very informative and does not state what proportion of activity is PA (which is unstable) or NPA. There is no scientific basis for this measurement and it is unregulated.

**Bio Active:** This suggests that the honey has NPA and uses a number system that corresponds with the UMF® numbers. Not regulated.

**MGS, Molan Gold Standard:** This measure is an indication that certain very high standards of quality control and activity level testing have been carried out. Regulated (Fig. 1).



Fig. 1. Seal of the Molan Gold Standard

But just because it is manuka honey does not mean that it is any different from other honeys in terms of bactericidal activity as Fig. 2 suggests.

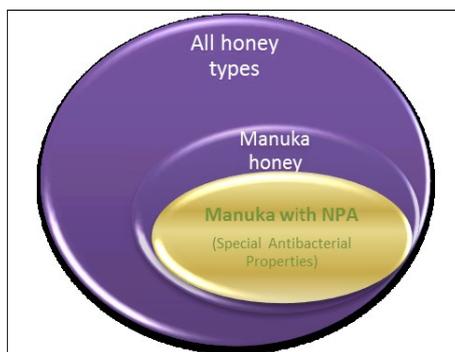


Fig. 2. Diagram showing the overlapping bacteriological activity of different honeys.

### So can you now work out what you want to buy?

Let's have a look at what the consumer should be looking for on a jar of manuka honey.

- Is it produced under a trade mark? MGO™ is trademarked by Manuka Health New Zealand Ltd. UMF® is registered and controlled by The UMF® Honey Association (UMF®HA).
- Does the label include one of the acronyms mentioned in this article plus a number? If so, look at the chart in Part One to see what it means. As a rough guide, active honey starts at around UMF® 10+, MGO™ 263+.
- Is the measurement regime regulated.
- Is the honey produced in New Zealand?
- Is it packed in New Zealand and is there a New Zealand supplier's address on the label?

If you can assure yourself of all the above, then your purchase should provide you with the genuine article. Don't worry if you have always bought UMF® honey and you buy a jar of MGO™ honey or the other way round. Use the chart in Part One to gain a comparison.

### Providing Consumer Confidence

With this plethora of different label devices and consumer concern over the terms UMF® and MGO™, New Zealand based producer organisations, particularly the UMF® Honey Association are continuing to invest substantial resources into the development of an international laboratory testing programme. This is administered by 'AsureQuality Limited', (a New Zealand Government owned entity), this is a programme in which each laboratory is

provided samples to ensure they can repeat and reproduce comparable results, testing for both phenol activity (UMF®) and MGO™ levels in the honey. The industry hopes that by ensuring all testing faithfully assesses products relative to the phenol equivalent it will help protect both the consumer and this unique product, in the territories in which it is sold.

Links have now been forged with FERA (The UK Food and Environment Research Agency) so that if you find some AAA+ 5 Star rated manuka honey on the supermarket shelves, you can have it tested at laboratories in the UK, USA and Singapore to find out if that rating means anything. New tests involve sophisticated devices profiling honeys to see if they have the "active" profile that has been found to be specific to active manuka honey. The on-going test development programme is aimed at securing the lucrative UK and Singaporean markets, with testing labs certifying that honey with the "UMF®" label is what it says it is. Plans to secure the reputation of manuka honey in China and Japan are in the pipeline.

### But it could be better

It is still possible to buy an array of manuka honey brands all over the world with a plethora of different and very confusing labels. When the consumer is standing in a busy supermarket, health store or searching for the product online, it can still be confusing enough to buy something that was not really wanted or even be duped into thinking one has the right product when it is really something else.

A favourite scam is to buy in manuka honey with a UMF® of 5 or even "ungraded" and re-label it as UMF® 20 then charge four times as much for it. How can consumers be aware of the difference? Without a laboratory it probably not possible and so it is this type of scam that worries the industry most. Hundreds of thousands of jars of dubious "active" manuka honey are sold internationally and it is not hard to find people touting manuka honey as a treatment for all manner of ailments and diseases. If the seller of a jar of manuka honey claims that TA or NPA or 'Active' or other notation means exactly the same as UMF® or MGO™, they

actually cannot know that unless they have tested it in a laboratory and therefore the consumer will not know what they are getting.

Fake manuka honey can seriously damage the industry which lacks the power and resources to stop the multi-million-dollar honey labelling fraud. John Rawcliffe, the CEO of the UMF®HA says that on a recent visit to Singapore, samples were gathered and tested of 33 "manuka" honeys sold close to the central railway station. Fifteen of the 33 were not "true to label". Some possessed none of the activity claimed and some possessed less than the label stated. Honey that is supposed to come from New Zealand is on sale in Singapore today with either no addresses for the New Zealand supplier or a fake address and these fakes are bringing the manuka industry into international disrepute.

Recent progress and the completion of phase one of the international testing laboratory programme is a significant milestone and the UMF® Honey Association hopes this will see the industry increasingly operating on clearly defined, scientifically-based principles moving away from the ill-disciplined market complete with divisive vested interests that have plagued the industry in recent years.

### Summary

- Manuka honey contains methylglyoxal. This gives most of its 'extra' antibacterial power operating synergistically with other compounds.
- Other honeys do not have this compound or if they do, it is found in negligible amounts. Although they may have other compounds that offer strong antibacterial properties.
- UMF® and MGO™ rated honeys are produced under regulated systems which offer guarantees and a correlation between the two measurements that exist.
- UMF® and MGO™ ratings do not give you the full picture of antibacterial activity in honey. All honeys are natural, complex compounds with synergistic elements providing the 'whole picture'.

- For full assurance make sure honey has 'Made and packed in New Zealand' on label with a New Zealand supplier address. (This last point is important).
- UMF® on the label. Well regulated and tested. Guaranteed.
- MGO™ on the label. Well regulated and tested. Guaranteed.
- MGS™ on the label. Well regulated and tested. Guaranteed.
- AMF or NPA on the label. (Uses same number system as for UMF®). Tested but not regulated. Look at the producer company's web site for further guidance.
- TA or Active on label. Unknown properties. Unregulated. (You don't know what you are getting).

Other labels. Unknown properties. Unregulated.

### Identifying manuka honey – the future

The biggest issue for the industry – and therefore the consumer is the problem of passing off honey as 'active manuka honey' when it isn't and the problem is reaching extreme levels. In a welcome advance, a UMF®HA initiative is carrying out high level research to accurately define or identify 'manuka honey' and they believe that the sooner they know exactly what manuka honey is and identify the key manuka honey markers, the better for the protection of the industry and the consumer.

It is obviously going to be more difficult to define the properties of a naturally occurring substance such as honey in terms of numbers or effects than some artificial, man-made medical compounds, so no system is going to be perfect. However, consumers should be offered some guidance on those properties and effects. In the meantime, consumers are advised to look carefully at the label on the jar and if the information fulfills the criteria mentioned above, then every effort possible in the shopping situation will have been made to evaluate the purchase.

### Caveat emptor

If labelling was simple and easy for every consumer to understand it would go a long way to ensuring consumer satisfaction and it is very much in the interests of the New Zealand manuka

honey industry, with support from the New Zealand government, to continue to work towards a simple **and** informative labelling regime. In the meantime, the manuka industry in New Zealand is working hard and spending a lot of money to ensure the integrity of their product in a major effort to protect the consumer from fraud.

### Useful information can be found at:

<http://www.umf.org.nz>  
and  
[www.manukahealth.co.nz](http://www.manukahealth.co.nz)

### UMF®/ MGO™ converter available at:

<http://www.umf.org.nz/umf-trademark/methylglyoxal-npa-honey-conversion-calculator>

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