

What's special about active Manuka Honey?

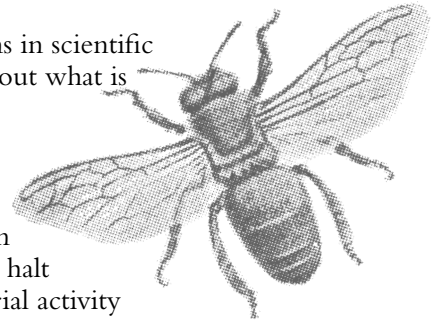
For the past 19 years honey researchers at the University of Waikato have been investigating what many local New Zealanders have accepted as common wisdom:

- **our local Manuka Honey is a superior treatment for wound infections.**

Manuka Honey is gathered in New Zealand from the Manuka bush, *Leptospermum scoparium*, which grows uncultivated throughout the country. (More recently, as a result of systematic screening of Australian honeys, a honey with the same properties has been found to be produced from *Leptospermum polygalifolium*, which grows uncultivated in a few parts of Australia.)

After the results of this work became known through publications in scientific journals, many people contacted the *Honey Research Unit* to find out what is so special about active Manuka Honey. The pertinent facts are:

- Honey has an antibacterial activity (due primarily to hydrogen peroxide formed in a “slow-release” manner by the enzyme glucose oxidase) present in honey, which can vary widely in potency. Some honeys are no more antibacterial than sugar, while others can be diluted more than 100-fold and still halt the growth of bacteria. The difference in potency of antibacterial activity found among the different honeys is more than 100-fold.
- “Active Manuka Honey” (and its Australian equivalent) is the only honey available for sale that is tested for its antibacterial activity. It contains an additional antibacterial component found only in honey produced from *Leptospermum* plants: what has been called the “**Unique Manuka Factor**” (UMF). There is evidence that the two antibacterial components may have a synergistic action.
- UMF is not affected by the catalase enzyme which is present in body tissue and serum. This enzyme will break down, to some degree, the hydrogen peroxide, which is the major antibacterial factor found in other types of honey. If a honey without UMF were used to treat an infection, the potency of the honey's antibacterial activity would most likely be reduced, because of the action of catalase.
- The enzyme that produces hydrogen peroxide in honey is destroyed when honey is exposed to heat and light. But UMF is stable, so there is no concern about Manuka Honey losing its activity in storage.
- The enzyme that produces hydrogen peroxide in honey becomes active only when honey is diluted. But UMF is active in full strength honey, which will provide a more potent antibacterial action diffusing into the depth of infected tissues.
- The enzyme that produces hydrogen peroxide in honey needs oxygen to be available for the reaction, so may not work under wound dressings or in wound cavities. Honey with UMF is active in all situations.
- The enzyme that produces hydrogen peroxide in honey becomes active only when the acidity of honey is neutralised by body fluids, but then the honey is diluted.
- The enzyme that produces hydrogen peroxide in honey could be destroyed by the protein-digesting enzymes that are in wound fluids.
- The UMF antibacterial activity diffuses deeper into skin tissues than does the hydrogen peroxide from other types of honey.
- Honey with UMF is more effective than that with hydrogen peroxide against some types of bacteria. For example, active Manuka Honey with UMF is about twice as effective as other honey against *Escherichia coli* and *Staphylococcus aureus*, the most common causes of infected wounds.



What are the results of using Manuka Honey?

Many medical professionals are using active Manuka Honey – and getting good results in patients with wounds that have not responded to standard treatment. For example, a successful trial of active Manuka Honey on unresponsive skin ulcers was recently published in the New Zealand Medical Journal. In addition, staff at a large hospital in Brisbane, Australia, recently used active Manuka Honey as a wound dressing on a patient for whom honey without UMF had failed. In other hospitals clinicians have likewise noted improvement in healing rates when changing from other honey to a Manuka Honey with a good level of UMF.



Manuka Flowers

laboratory test of antibacterial activity, with honey being compared with a standard antiseptic (phenol, also known as carbolic) for potency. For example, a honey with a UMF rating of 4 would be equivalent to the antiseptic potency of 4% solution of phenol, as used as carbolic disinfectant; a honey with a rating of 10 would have a potency equivalent to a 10% solution of phenol.

Medical professionals in New Zealand use active Manuka Honey with a rating of UMF 10 or higher. Although good results may be obtained with lower levels of activity, there is a chance that the lower activity will not be enough to fully clear an infection. In addition, honey with a lower level of activity will not allow as much of the antibacterial elements to diffuse into infected tissue, which could mean that effective control of infection may not be achieved in deeper tissue.

To alleviate any concern over the possible risk of introducing infection by the use of an unprocessed natural product on wounds, honey can be sterilised by gamma irradiation without loss of any of its antibacterial activity. Active Manuka Honey and the Australian Leptospermum honey are commercially available sterilised in this way.

To find out more about Manuka Honey, please google

“Effects of Manuka Honey”, or

“Healing properties of Manuka Honey”,

“Manuka Honey Wound Care”,

“Ulcers and Manuka Honey” or similar topics.

None of the results being obtained clinically should be considered evidence that active Manuka Honey is more effective than other honey – a comparative clinical trial will be needed to establish that. Nevertheless, there are good theoretical reasons for choosing to use active Manuka Honey with a good level of UMF for management of wound infections.

To rate the potency of antibacterial activity of honey, I devised the testing method and the UMF number. The UMF numbers come from a standard