

# KANAWHA VALLEY

BEEKEEPERS ASSOCIATION

## HONEY HEALING

### Honey's healing powers

Australian researchers have revealed the secret explanation for the deadly bug-killing properties of honey. Researcher, Shona Blair from the University of Sydney has found that, when diluted honey is applied to a moist wound, it produces hydrogen peroxide, a known anti-bacterial agent. The research has also revealed that honey is powerful even against drug-resistant hospital killer golden staph *Staphylococcus aureus*.

Ms Blair said hydrogen peroxide is produced when the enzyme glucose oxidase (produced by bees) reacts with water in the wound and glucose in the honey. "It's like bleach, she said. "If you put bleach on your skin it would burn you, but this is at such a low concentration it doesn't harm the skin."

Ms Blair found that honey diluted to one per cent inhibited the growth of *S. aureus* for about three hours. Stronger solutions of honey at two per cent and three per cent inhibited growth for five hours and 10 hours respectively. "There was no moisture or pus out of the wound," she said.

Another reason for honey's antibacterial properties is its high sugar content. Honey left in the cupboard never goes bad, partly because bacteria need moisture to grow. Honey has so many sugar molecules that any available water molecules become bound to them, and aren't available for bacteria to use.

Honey is still used in Africa, India and the Middle East, and the Greek philosopher Aristotle often prescribed different types of honey for different ailments. Honey was known to have powerful wound-healing properties in ancient times, but its properties appear to have been forgotten. To apply honey to a wound, put it directly on to the wound, or on to the dressing. Change once or twice a day. It may sting a little at first. Raw honey from health food stores is best, as it has not been heated which can affect its bacterial properties.

### Antibacterial properties of honey

Honey has been known to have antibacterial properties for more than a century. Although it has been used as a medicine since ancient times, initially it was just known to be an effective remedy. Now it can be seen that the effectiveness of honey in many of its medical uses is due to its antibacterial activity. It is well established that honey inhibits a broad spectrum of bacterial and fungal activity. There has not been much distinction made between the different types of antimicrobial activity in honey to which the various microbial species are sensitive.

Antibacterial activity in honey can be caused by

- Osmotic effect, whereby water is drawn away from the microorganisms reducing their ability to survive,
- Acidity, honey is acidic, its pH being between 3.2 and 4.5, which inhibits growth in many pathogens,
- Hydrogen Peroxide, which is produced enzymically in the honey by the bee, and
- Phytochemical Factors, these non-peroxide antibacterial factors are believed to be the many complex phenols and organic acids often referred to as flavonoids.

These latter complex chemicals that do not breakdown under heat or light provide Manuka honey with its 'unique' antibacterial properties.

In the time of the Greek philosopher Aristotle it was recommended that honey collected in specific regions and seasons (and therefore presumably from different floral sources) be used for the treatment of particular ailments, but in modern medicine

clinical practitioners have not heeded these views. Although it appears that the honey from certain plants has better antibacterial activity than that from others, little work has been done to measure these variations. Honeydew honey from the conifer forests of the mountainous regions of central Europe has been found to have particularly high antibacterial activity, likewise honey from Manuka (*Leptospermum scoparium*) in New Zealand has been found to have a high non-peroxide activity. Studies on the effectiveness against wound-infecting species of bacteria show that Manuka honey is more effective than other honeys for *Escherichia coli* and *Staphylococcus aureus* while other honey was superior for the other 5 tested species, including *Salmonella*, *Streptococcus*, and *Pseudomonas*. There was little difference between the two types of antibacterial activity in their effectiveness, although some bacteria were more sensitive to the action of one type of honey than the other.

