

Therapeutic Aspects of Honey

Magazine Articles

Molan, P. C. (1985) "Selection of honey for medicinal use." *New Zealand Beekeeper* 184, 29-30.

Molan, P.C. "Honey for the treatment of infections". (1992) *The New Zealand Beekeeper* 216, 19-20. [Re-printed in *Bee Informed* 3 (2) 6-9 (1996)]

Molan, P.C. "Honey for the treatment of infections." *The Beekeepers Quarterly* 28: 24 (1992). (Re-printed in *The Institute Journal* 3 (1) 7-9 (1993) [The Institute of Health Food Retailing, U. K.])

Molan, P. C. (1993) "Honey as an antiseptic". *Open Forum for Health Information* 7 (2): 27-28.

Molan, P.C. (1996) "Honey as an antimicrobial medicine." *Wanganui Chronicle* 11 July, p. 10

Molan, P.C. (1997) "Antiseptic honey" *Canterbury Farmer* June issue, p. 11

Molan, P. C. (1998) "A therapeutic evaluation of honey." *Animal Options* Feb-April issue, pp. 4-7.

Molan, P. C. (1998) " Establishing honey as a respectable medicine." *The New Zealand Beekeeper* 5 (11): 16-18.

Molan, P. C. (1999) "The use of honey for dressing animals' wounds" *New Zealand Holistic Veterinarians Society Newsletter*

Molan, P. C. (1999) "The use of honey in the treatment of leg ulcers." *The North Coast Senior Post (Australia)* 3 (7)

Molan, P. C. (2000) "Establishing honey as a recognized medicine" *Bee Informed (The Journal of the American Apitherapy Society)* 7 (1): 7-9.

Molan, P. C. (2000) "The value of research" *New Zealand Beekeeper* 7 (10): 19-21.

Molan, P. C. (2000) "Using honey on wounds" *Nurse to Nurse* 1 (7): 24-25.

Molan, P. C.; Betts, J. A. (2001) "Dressing wounds with honey." *NZ Nursing Review* March issue 19-20.

Betts, J. A.; Molan, P. C. (2001) "Honey as a wound dressing." *Tissue Issue (NZ Woundcare Society)* 6 (4): 3-4.

Reviews

Molan, P. C. (1998) "A brief review of the use of honey as a clinical dressing." *Primary Intention (The Australian Journal of Wound Management)* 6 (4): 148-158

Molan, P. C. (1999) "The role of honey in the management of wounds." *Journal of Wound Care* 8 (8): 423-426.

Molan, P. C. (1999) " Why honey is effective as a medicine. 1. Its use in modern medicine." *Bee World* 80 (2): 80-92.

Cooper, R. A. and Molan, P.C. (1999) "Honey in wound care" *Journal of Wound Care* 8 (7) 340.

Molan, P.C. (2000) "The unique properties of manuka honey." *Advances in Wound Care*
<http://www.woundcarenet.com/industry/manukaletter.htm>

Molan, P. C. (2000) "Selection of honey for use as a wound dressing." *Primary Intention (The Australian Journal of Wound Management)* 8 (3): 87-92.

Molan, P.C; Cooper, R. A. (2000) "Honey and sugar as a dressing for wounds and ulcers" *Tropical Doctor* 30 249-250.

Molan, P.C. (2001) "Potential of honey for the treatment of wounds and burns." *American Journal of Clinical Dermatology* 2 (1): 13-19. [Re-printed, with some changes, also as: "Honey for the treatment of wounds and burns." *New Ethicals* 4 (7) 13-23; and as "Treatment of wounds and burns with honey." *Current Therapeutics* 42 (9) 33-39.]

Molan, P.C. (2001) "Why honey is effective as a medicine. 2. The scientific explanation of its effects." *Bee World* 82 (1): 22-40.

Molan, P. C. (2001) " The potential of honey to promote oral wellness." *General Dentistry* 49 (6): 584-589

Papers in Journals

Wood, B.; Rademaker, M.; Molan, P. C. (1997) "Manuka honey, a low cost leg ulcer dressing." *New Zealand Medical Journal* 110: 107.

Dunford, C.; Cooper, R.A; Molan, P.C. (2000) "Using honey as a dressing for infected skin lesions." *Nursing Times NTplus* 96 (14): 7-9.

Dunford, C.; Cooper, R.A; White, R.J.; Molan, P.C. (2000) "The use of honey in wound management" *Nursing Standard* 15 (11): 63-68.

Molan, P. C. (2000) "Selection of honey for use as a wound dressing." *Primary Intention (The Australian Journal of Wound Management)* 8 (3): 87-92.

Molan, P. C.; Betts, J. A. (2000) "Using honey as a wound dressing: some practical considerations." *Nursing Times* 96 (49): 36-37.

Molan, P. C.; Cooper, R. A. (2000) "Honey and sugar as a dressing for wounds and ulcers." *Tropical Doctors* 30: 249-250.

Papers recently submitted to journals

Cooper, R. A; Molan, P. C.; Krishnamoorthy, L; Harding, K. G. (2001) "The use of honey in healing a recalcitrant surgical wound following surgical treatment of hidradenitis suppurativa." *European Journal of Clinical Microbiology and Infectious Diseases*.

"Phuapradit, W.; Molan, P. C. (2001) " Tropical application of honey in treatment of abdominal wound disruption." *Australian and New Zealand Journal of Obstetrics and Gynecology*

Tonks, A.; Cooper, R. A; Price, A. J.; Molan, P. C; Jones, K. P. (2001) "Honey and monocyte modulation: a possible role in wound healing." *Cytokines*

Molan, P. C.(2001) "Re-introducing honey in the management of wounds and ulcers - theory and practice." *Ostomy/Wound Management* in press

Conference Papers

Molan, P.C. (1996) "Honey as a wound dressing." - a poster paper presented at the 2nd National Wound Care Conference, Harrogate, U.K.

Molan, P.C. (1996) "Honey as a wound dressing." - a poster paper presented at the 2nd National Wound Care Conference, Harrogate, U.K.

Molan, P. C.; Brett, M. (1998) " Honey has potential as a dressing for wounds infected with MRSA." - a paper presented at the 2nd Australian Wound Management Association Conference, Brisbane, Australia.

Molan, P.C. (1999) " The medical use of honey as an antiseptic wound dressing." - a paper presented by invitation at the National Infection control Conference, Rotorua, NZ.

Molan, P.C. (1999) "Establishing honey as a recognised medicine." - a paper presented by invitation (keynote speaker) at the Apimondia Congress, Vancouver, Canada

Molan, P.C.; Betts, J. (2000) "Manuka honey in the management of venous ulceration." - a paper presented at the Vascular Conference, Hamilton, NZ.

Allen, K. L.; Hutchinson, G.; Molan, P.C. (2000) "The potential for using honey to treat wounds infected with MRSA and VRE." - a poster paper presented at the First World Congress on Wound Healing, Melbourne, Australia: 10 – 13 September 2000.

Robson, V.; Ward, R. G.; Molan, P. C. (2000) "The use of honey in split skin grafting." – a paper presented at the European Wound Management Association Conference, Harrogate, U.K.

Molan, P.C. (2001) "Manuka honey as a medicine" - Proceedings of the Global Bioactives Summit, Hamilton, NZ . Issued on CD-ROM jointly by the New Zealand Dairy Group, Celentis and Agresearch: Hamilton, New Zealand.

Molan, P. C. (2001) "Honey for oral health."- paper presented by invitation at the American Association for Dental Research Conference in Chicago, USA. Abstract published in Journal of Dental Research 80 (Special Issue), 130.

Molan, P.C. (2001) "The potential of honey for treatment and prevention of periodontal disease." - a paper presented by invitation at the 8th International Meeting of the International Academy of Periodontology, Auckland, New Zealand.

Molan, P.C. (2001) "Honey use in wound care." - a paper presented by invitation at the State Conference of the New South Wales Wound Care Society, Woolongong, Australia.

Betts, J. A.; Molan, P. C. (2001) "A pilot trial of honey as a wound dressing has shown the importance of the way that honey is applied to wounds." – a paper presented at the European Wound Management Association Conference, Dublin, Eire.

Robson, V.; Dunford, C.; Molan, P.C.; Cooper, R.A. (2001) "The use of honey in wound management." - a paper presented at the Innovations in Wound Care Conference, Cardiff, U.K.

Betts, J.A.; Molan, P.C. (2002) "Results of a pilot trial of manuka honey as a dressing for infected chronic wounds." - a paper presented at the 4th Australian Wound Management Association Conference, Adelaide, Australia.

Theses

A. Fjällman (M.Sc.) Confectionery made from honey with high antibacterial activity for the protection of dental health. (2000)

C. Bunting (MSc) The production of hydrogen peroxide by honey and its relevance to wound healing. (2001)

Antimicrobial Properties of Honey

Magazine Articles

Molan, P. C. (1993) "Honey as an antiseptic". Open Forum for Health Information 7 (2): 27-28.

Molan, P.C. (1994) "The antibacterial properties of honey." Chem NZ No.54 18-23.

Molan, P. C. (1995) "The antibacterial properties of honey." Chemistry in New Zealand 59(4): 10-14.

Chapters in Books

Molan, P. C. (1997) "Honey as an antimicrobial agent". In: Mizrahi, A. and Lensky, Y. (eds.) Bee Products: Properties, Applications and Apitherapy Plenum Press, New York. Pages 27-37.

Reviews

Molan, P. C. (1992) "The antibacterial activity of honey. 1. The nature of the antibacterial activity." Bee World 73(1): 5-28.

Molan, P. C. (1992) "The antibacterial activity of honey. 2. Variation in the potency of the antibacterial activity." Bee World 73(2): 59-76.

Molan, P. C. (2001) "Honey as a topical antibacterial agent for treatment of infected wounds." World Wide Wounds <http://www.worldwidewounds.com/2001/november/Molan/honey-as-topical-agent.html>

Papers in Journals

Molan, P. C.; Russell, K. M. (1988) "Non-peroxide antibacterial activity in some New Zealand honeys." Journal of Apicultural Research 27: 62-67.

Molan, P. C.; Smith, I. M.; Reid, G. M. (1988) "A comparison of the antibacterial activity of some New Zealand honeys." Journal of Apicultural Research 27: 252-256.

Russell, K. M.; Molan, P. C.; Wilkins, A. L.; Holland, P. T. (1988) "The identification of some antibacterial constituents of New Zealand Manuka honey." Journal of Agricultural and Food Chemistry 38: 10-13.

Allen, K. L.; Molan, P. C.; Reid, G. M. (1991) "A survey of the antibacterial activity of some New Zealand honeys." Journal of Pharmacy and Pharmacology 43 (12): 817-822.

Allen, K. L.; Molan, P. C.; Reid, G. M. (1991) "The variability of the antibacterial activity of honey." Apiacta 26 (4): 114-121.

Willix, D. J.; Molan, P. C.; Harfoot, C. J. (1992) "A comparison of the sensitivity of wound-infecting species of bacteria to the antibacterial activity of manuka honey and other honey." Journal of Applied Bacteriology 73: 388-394.

Al Somai, N.; Coley, K. E.; Molan, P. C.; Hancock, B. M. (1994) "Susceptibility of *Helicobacter pylori* to the antibacterial activity of manuka honey." *Journal of the Royal Society of Medicine* 87 (1): 9-12.

Molan, P. C.; Allen, K. L. (1996) "The effect of gamma-irradiation on the antibacterial activity of honey." *Journal of Pharmacy and Pharmacology* 48: 1206-1209.

Brady, N. F.; Molan, P. C.; Harfoot, C. G. (1997) "The sensitivity of dermatophytes to the antimicrobial activity of manuka honey and other honey." *Pharmaceutical Sciences* 2: 1-3.

Allen, K. L.; Molan, P. C. (1997) "The sensitivity of mastitis-causing bacteria to the antibacterial activity of honey." *New Zealand Journal of Agricultural Research* 40: 537-540.

Cooper, R. A.; Molan, P. C. (1999) "The use of honey as an antiseptic in managing *Pseudomonas* infection." *Journal of Wound Care* 8 (4): 161-164.

Cooper, R. A.; Molan, P. C.; Harding, K. G. (1999) "Antibacterial activity of honey against strains of *Staphylococcus aureus* from infected wounds." *Journal of the Royal Society of Medicine* 92: 283-285.

Papers recently submitted to journals

Bang, L. M.; Molan, P. C. (2001) "The effect of dilution on the rate of production of hydrogen peroxide in honey."

Brady, N. F.; Molan, P. C. (2001) "Antibacterial activity of honey against enteropathogenic bacteria"

Cooper, R. A.; Halas, E.; Molan, P. C. (2001) "The efficacy of honey in inhibiting strains of *Pseudomonas aeruginosa* from infected burns."

Cooper, R. A.; Halas, E.; Davies, R.; Molan, P. C.; Harding, K. G. (2001) "Honey and gram positive cocci of clinical significance in wounds"

Conference Papers

Molan, P. C.; Allen, K. L.; Tan, S. T.; Wilkins, A. L. (1989) Identification of components responsible for the antibacterial activity of Manuka and Viper's Bugloss honeys - presented at the Annual Conference of the New Zealand Institute of Chemistry.

Molan, P.C. (1992) "Honey as an antibacterial agent" - a paper presented by invitation at the Annual Conference of the New Zealand Dieticians Association.

Allen, K.L. and Molan, P.C. (1994) "A comparison of the sensitivity of mastitis-causing bacteria to the antibacterial activity of manuka honey, artificial honey and other honey." - a poster paper presented at the annual conference of the British Beekeepers Association.

[Also presented at the annual conference of the New Zealand Beekeepers Association.]

Molan, P. C.; Brett, M. (1998) " Honey has potential as a dressing for wounds infected with MRSA." - a paper presented at the 2nd Australian Wound Management Association Conference, Brisbane, Australia.

Molan, P.C. (1999) " The medical use of honey as an antiseptic wound dressing." - a paper presented by invitation at the National Infection control Conference, Rotorua, NZ.

Molan, P.C. (2000) " The use of honey as an antimicrobial agent." - a paper presented by invitation at the New Zealand Institute of medical Laboratory Science Conference, Rotorua, NZ.

Allen, K. L.; Hutchinson, G.; Molan, P.C. (2000) "The potential for using honey to treat wounds infected with MRSA and VRE." - a poster paper presented at the First World Congress on Wound Healing, Melbourne, Australia: 10 – 13 September 2000.

Cooper, R.A.; Halas, E.; Davies, R.; Molan, P.; Harding, K.G. (2000) The inhibition of Gram positive cocci of clinical importance by honey. First World Congress on Wound Healing, Melbourne, Australia: 10 – 13 September 2000.

Buntting C.M.N.; Molan, P.C. (2002) " Honey provides an effective and harmless source of hydrogen peroxide for chemokine and antibacterial roles in wound care." - a paper presented at the 4th Australian Wound Management Association Conference, Adelaide, Australia.

Theses

K.M. Russell (M.Sc.) The antibacterial properties of honey. (1983)

D.F. Sealey (M.Sc.) Chromatographic investigations of the antibacterial activity in manuka honey. (1988)

M.J. Hodgson (M.Sc.) Investigation of the antibacterial action spectrum of some honeys. (1989)

S.B. Price (M.Sc.) Isolation of antibacterial components from manuka honey. (1991)

D.J. Willix (M.Sc.Tech.) A comparative study of the antibacterial action spectrum of manuka honey and other honey. (1992)

A. Fjällman (M.Sc.) Confectionery made from honey with high antibacterial activity for the protection of dental health. (2000)

V. Anderson (M.Sc.) Investigating the potential for using honey to treat Streptococcal throat infections. (2000)

V. French (M.Sc.) Investigating the sensitivity of medically important bacteria to the antimicrobial activity of honey. (2002)

Composition and Identification of Honey

Magazine Articles

Tan, S. T.; Wilkins, A. L.; Reid, G. M. (1986) "Floral source identification: a chemical approach." *New Zealand Beekeeper* 190: 21-3.

Tan, S. T.; Wilkins, A. L.; Reid, M.; Molan, P. C. (1988) "A chemical approach to the characterisation of New Zealand Ling Heather honey." *New Zealand Beekeeper* 199: 31-33.

Tan, S. T.; Wilkins, A. L.; Reid, G. M. (1990) A chemical procedure for the characterization of New Zealand Thyme and Willow Honeys. *New Zealand Beekeeper* 205, 11-12.

Molan, P. C. (1999) "The unique properties of manuka honey" *Bee Informed (The Journal of the American Apitherapy Society)* 6 (1): 5-6.

Chapters in Books

Molan, P. C. (1996) "Authenticity of honey". In: Ashurst, P.R. and Dennis, M.J. (eds.) *Food Authentication*, Blackie Academic and Professional, London pp. 259-303.

Reviews

Molan, P. C. (1998) "The limitations of the methods of identifying the floral source of honeys" *Bee World* 79 (2): 59-68.

Papers in Journals

Tan, S. T.; Holland, P. T.; Wilkins, A. L.; Molan, P. C. (1988) "Extractives from New Zealand honeys. 1. White clover, manuka and kanuka unifloral honeys." *Journal of Agricultural and Food Chemistry* 36 (3): 453-460.

Russell, K. M.; Molan, P. C.; Wilkins, A. L.; Holland, P. T. (1988) "The identification of some antibacterial constituents of New Zealand Manuka honey." *Journal of Agricultural and Food Chemistry* 38: 10-13.

Tan, S. T.; Wilkins, A. L.; Molan, P. C.; Holland, P. T.; Reid, M. (1989) "A chemical approach to the determination of the floral sources of New Zealand honeys." *Journal of Apicultural Research* 28 (4): 212-22.

Tan, S. T.; Wilkins, A. L.; Holland, P. T. (1989) "Isolation and X-ray crystal structure of a degraded carotenoid constituent of New Zealand thyme honey", *Australian Journal of Chemistry*, 42: 1799-1804.

Tan, S. T.; Wilkins, A. L.; Holland, P. T.; McGhie, T. K. (1989) "Extractives from New Zealand unifloral honeys. 2. Degraded carotenoids and other substances from heather honey." *Journal of Agricultural and Food Chemistry* 37 (5): 1217-21.

Tan, S. T.; Wilkins, A. L.; Holland, P. T.; McGhie, T. K. (1990) "Extractives from New Zealand honeys. 3. Unifloral thyme and willow honey constituents." *Journal of Agricultural and Food Chemistry* 38 (9): 1833-8.

Broom, S. J.; Ede, R. M.; Wilkins A. L.; Lu, Y. (1992) " Synthesis of (+/-)-E-4-(1,2,4-trihydroxy-2,6,6-trimethylcyclohexyl)-but-3-en-2-one: a novel degraded carotenoid isolated from New Zealand thyme (*Thymus vulgaris*) honey." *Tetrahedron Letters*, 1992, 33 (22): 3197-3200.

Broom, S. J.; Ede, R. M.; Wilkins A. L.; Lu, Y. (1992) "Isolation and structural characterisation of Kamahine C: an unusual spiroketal found in a native New Zealand honey." *Tetrahedron Letters*, 1992, 33 (41): 6201-6204.

Ede, R. M.; Wilkins A. L.; Lu, Y.; Tan, S. T. (1993) "Novel nor-sesquiterpenoids in New Zealand Honeys II. Isolation and structural characterisation of meliracemoic acid" *Tetrahedron Letters* 34: 6795-6798.

Wilkins, A. L.; Lu, Y.; Molan, P. C. (1993) "Extractable organic substances from New Zealand unifloral manuka (*Leptospermum scoparium*) honeys." *Journal of Apicultural Research* 32 (1): 3-9.

Wilkins, A. L.; Lu, Y.; Tan, S. T. (1993) "Extractives from New Zealand honeys. 4. Linalool derivatives and other components from nodding thistle (*Carduus nutans*) honey." *Journal of Agricultural and Food Chemistry* 41 (6): 873-878.

Wilkins, A. L.; Lu, Y.; Tan, S. T. (1995) "Extractives from New Zealand honeys. 5. Aliphatic dicarboxylic acids in New Zealand rewarewa (*Knigtea excelsa*) honey." *Journal of Agricultural and Food Chemistry* 43 (12): 3021-3025.

Wilkins, A. L.; Tan, S. T.; Molan, P. C. (1995) "Extractives from New Zealand unifloral vipers bugloss (*Echium vulgare*) honey." *Journal of Apicultural Research* 34 (2): 73-78.

Astwood, K.; Lee, B.; Manley-Harris, M. (1998) "Oligosaccharides in New Zealand honeydew honey." *Journal of Agricultural and Food Chemistry* 46: 4958-4962.

Papers recently submitted to journals

Bang, L. M.; Molan, P. C. (2001) "The effect of dilution on the rate of production of hydrogen peroxide in honey."

Conference Papers

Molan, P. C.; Allen, K. L.; Tan, S. T.; Wilkins, A. L. (1989) Identification of components responsible for the antibacterial activity of Manuka and Viper's Bugloss honeys - presented at the Annual Conference of the New Zealand Institute of Chemistry.

Theses

S.T. Tan (D.Phil.) A chemical investigation of some N.Z. honeys. (1989)

M.D.Valentine (M.Sc.) A chemical analysis of New Zealand ling heather honey. (1992)

L.M. Bang (M.Sc.) Development of a natural food preservative using a combination of honey and lactoperoxidase. (1998)