McMEEKAN MEMORIAL AWARD 2005

Professor Tom N. Barry

Tom Barry has made a major contribution to the understanding of the effects of condensed tannins and other secondary plant compounds in forages on ruminant animal nutrition and sustainable production. Tom's published papers have reported substantial effects of condensed tannins on wool production and reproductive efficiency in ewes and on parasitism and growth of lambs. His studies have extended into the development of sustainable grazing systems, particularly forages in dry climates. During this period he has published 35 full-length peer-reviewed papers in international journals, of which 26 specifically relate to plant secondary compounds, and 15 peer-reviewed conference papers. His main areas of research were: studying the effects of forage condensed tannins upon reproduction and sustainable control of parasitism in grazing sheep; farming systems trials, examining the effect on animal production on a yearly basis, of integrating plants containing secondary compounds into grazing systems; initiating a new research area into the value of willow and poplar as supplements to livestock during drought conditions; developing willow browse blocks and studying the effects of grazing them upon reproduction and control of parasitism in grazing sheep.

In systems research initiated in the Wairarapa in 2000, grazing systems with an input of *Lotus corniculatus* were compared with those based on perennial ryegrass/white clover, over a 12-month period. Mating ewes for 6-8 weeks on lotus increased ovulation rate and lambing percentage by 25-30%, whilst also reducing post-natal lamb mortality. In the spring, grazing on lotus increased lamb growth and wool production, whilst reducing dag formation and faecal egg counts in both ewes and lambs.

Supplementation of ewes with willow and poplar during mating (70 days) when grazing drought pastures increased scanning, lambing and weaning percentages by 25-30%. *In vivo* digestibility trials and laboratory analysis have shown willow/poplar forage to be of higher nutritive value than drought pasture and to contain substantial concentrations of secondary compounds (condensed tannin and phenolic glycosides). A grazing trial in 2004/2005 showed that grazing willow browse blocks reduced parasitism, probably due to reducing re-infection. Condensed tannins may be involved in this.

Tom's achievements have been recognised by the international science community through invitations to be plenary speaker at several international conferences. Tom Barry is recognised worldwide as an expert in ruminant nutrition, as indicated by a very high number of citations. He received a high citation award in 2001 from the American Society of Information Science and Technology, placing him in the top 0.5% for citations in the field of Agriculture. He is one of 250 people world wide to receive this award and the only one from New Zealand. In 2004 he was classified as an A grade researcher (defined as a researcher of world standing) by the New Zealand Tertiary Education Commission. Tom's contribution to agricultural science, both in NZ and world-wide, and particularly his contribution to the understanding of the effects of plant secondary compounds in ruminant nutrition and animal production in the last five years, thoroughly warrants his receipt of the McMeekan Memorial Award

S.W. Peterson