'Sheep measles' – a new challenge for the veterinary profession

by Bruce Simpson, Biosecurity Ltd

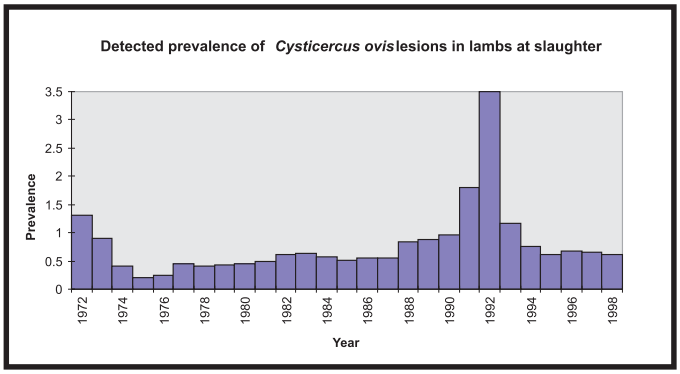
Veterinarians are now seen as the main source of information on the control of *Taenia ovis* (sheep measles). That is just one of the findings from a survey of sheep farmers commissioned by Ovis Management Ltd earlier this year.

For more than 20 years, *Taenia ovis* was the subject of regulatory control under the provisions of the Dog Control and Hydatids Act. Responsibility for control was shared between the National Hydatids Council, which set policies, and Local Authorities, which were responsible for implementation of those policies. For much of that time routine dosing of dogs by Hydatid Control Officers was compulsory. Later, the efforts focused more on education and the checking of the status of dogs through serological testing. During this phase of the programme, treatment of dogs was discouraged in many areas on the basis that it was a sign of failure to implement the other components of the control programme. Education focused on secure slaughtering facilities on farms, the freezing of sheep meat before feeding it to dogs, and the control of dogs to prevent access to sheep or goat carcasses.

The Biosecurity Act (1993) shifted responsibility for decision-making to farmers and, after 18 months of intensive discussion and debate (some of it extremely heated), a decision was taken to remove regulatory control and leave the responsibility in the hands of individual farmers. The industry did not 'wipe its hands' of interest in the parasite. *Taenia ovis* had, after all, been brought under regulatory control in 1972 because of the threat that the large number of lesions, resulting from the cystic stage, in lamb carcasses was presenting to exports of sheep meat. Research by Gemmel and others during the 1970s and '80s illustrated the huge fecundity of *Taenia ovis* and the potential for very high infection rates in susceptible lambs. Ovis Management Ltd, financed by the meat processing companies, has continued to fund a programme encouraging farmers to maintain control efforts and monitoring the prevalence of lesions in lamb carcasses. Responsibility for control rests with individual farmers and they view veterinarians as their major source of information.

Trends in prevalence rates in lamb carcasses

The graph below shows trends in the prevalence rates of detection of lesions caused by *Taenia ovis* cysts (*Cysticercus ovis*) in lamb carcasses since 1972.



Although data are not available prior to 1972, anecdotes indicate that prevalence rates were significantly higher before the introduction of regulatory control. The gradual rise in prevalence of lesions detected at slaughter from 1975 to the late 1980s was one factor leading to views that the routine dosing of dogs was not exerting effective control.

A decision was made to cease routine dosing of dogs on most farms. Implementation of this decision from around 1990 was followed by a marked increase in prevalence to 1992. The rapid decrease in prevalence from 1992 to 1994 is not easily explained but it seems likely to have resulted from two factors: a decrease in the feeding of sheep meat to dogs and an increase in the voluntary treatment of dogs with praziquantel.

Why has disaster not struck?

Education of dog owners by officers of local authorities, enforcement of control measures and serological testing of dogs have all virtually ceased. Surveys carried out on behalf of Ovis Management Ltd in 1993 and 1999, however, reveal some of the trends in knowledge about *Taenia ovis* and in control measures being exercised by sheep farmers.

Awareness of *Taenia ovis*

General awareness of *Taenia ovis* amongst sheep farmers remains high, with more than 95% aware that the parasite cycles between dogs and sheep and that it can be controlled through proper treatment of sheep meat. The awareness that the cysts of *Taenia ovis* cause lesions in sheep meat also remains high at around 85%.

Concerns over the impact of *Taenia ovis* on condemnation and downgrading of carcasses and on financial returns have increased substantially over the six years between surveys. Concern over the potential impact on income was expressed by 48% of farmers in the 1999 survey whereas only 32% expressed such concern in 1993. Similarly, in the 1999 survey, higher numbers of farmers expressed concern over the potential for *Taenia ovis* to affect the export trade in sheep meat.

Control measures

- 98% of farmers state that they treat sheep meat (by freezing or cooking) before it is fed to dogs. This is the same level as in 1993.
- 80% of farmers now say that they treat their dogs for *Taenia ovis,* with 74% treating their dogs at least three-monthly. This must be a large change from the early 1990s, when most official control agencies actively discouraged treatment.
- In 1999 there is a higher level of concern over the potential for visiting dogs to bring infection on to sheep farms with more farmers stating that they take pro-active steps to control those risks.

Sources of information

In 1999 veterinarians are seen as the major group promoting control of *Taenia ovis* and offering advice. This contrasts with the situation up to 1993 when Hydatid Control Officers were regular visitors to sheep farms, community-based education programmes had high profile, and the involvement of veterinary practitioners was minimal.

Comments

The continuing high level of awareness of 'sheep measles' and the methods available for its control reflect well on the efforts of those involved in the regulatory control programme in the past. The effects of their education programme continue to have a substantial impact. This impact will decrease with time. Fewer younger farmers are aware of *Taenia ovis* and this may be the beginning of a trend.

The use of anthelmintics in control has become common. Only 20% of farmers are treating dogs monthly. Dosing at intervals longer than this will not prevent pasture contamination if other control measures are not in place.

Veterinarians have assumed the role of primary information providers on the control of 'sheep measles'. It is critical that broad-based advice is given, recognising the huge fecundity of *Taenia ovis* and the need for a full range of control measures to be maintained. Without support from veterinarians, the knowledge base established amongst farmers through years of effort by Hydatid Control Officers will slip. Reliance on periodic dog dosing will be ineffective if other control measures are not maintained and losses resulting from *Taenia ovis* will increase.

Veterinarians in rural practice should ensure they are well placed to provide a professional service to sheep farmers on the range of management practices available to avoid the costs of carcasses being downgraded and/or condemned as a result of 'sheep measles'. Resource material is available from Ovis Management Ltd through PO Box 2092, Palmerston North, or e-mail (covis@xtra.co.nz).

Biosecurity Ltd is a company owned and operated by Bruce Simpson and John and Judy Hellström.

The company offers consultancy and contract services to the animal health industry in the areas of market access, disease control, quality assurance, product assessment and feasibility of biotechnologies. ❑