

Control of endoparasites in organic livestock systems

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Introduction Endoparasite control in organic and non organic livestock shares many features. The difference is that organic farmers are constrained by the requirements of the standards which regulate organic production (UKROFS, 2001). This paper reviews the alternative strategies currently available.

Organic standards Animal health in organic livestock production is based on disease prevention without the routine use of veterinary medicines. This is to be achieved by the application of sound management practices; breed and strain selection; preventive husbandry; optimal nutrition and appropriate stocking densities. The standards prefer the use of herbal or homeopathic medicines where these can be shown to be efficacious. Conventional veterinary medicines may not be used to prevent disease but can be used to treat clinical cases. However, the strategic use of medicines is permitted where an identified disease risk cannot be prevented by management practices alone. The animal health strategy must be formalised by the production of an animal health plan specific to the individual farm.

Principles of control Most endoparasites are endemic in the British Isles, although they show regional variation in incidence. Eradication from individual farms is not an option. Instead control seeks to limit exposure of susceptible animals to parasites and to improve the ability of animals to develop immunity following exposure. Organic systems require access to pasture for ruminant and monogastric animals. Grazing management thus provides a mechanism by which parasite challenge to individual animals can be reduced. A knowledge of the epidemiology of the specific parasite is required if practical means of control are to be developed. Immunity to parasites is modulated by genetic and nutritional factors as well as by exposure. Novel forage crops such as Lotus or chicory are being evaluated for their parasite control properties. Genetic selection for resilience or immunity to parasites is also being studied.

Practical control measures Few organic farms achieve parasite control without some medicine inputs (Roderick and Hovi, 1999). An integrated parasite control strategy should be the aim. This combines grazing management, nutritional and breed aspects with strategic dosing where necessary. Clean grazing systems for ruminants are well known but integration of other animal species such as pigs and poultry into organic rotations is also practised. These systems are based on the host specificity of most endoparasites but may break down when parasites such as *Nematodirus battus* and *Trichostrongylus axei* are able to infect more than one animal host. Variations on classical clean grazing include alternate grazing between species such as cattle and sheep on an annual basis or mixed species grazing with cattle and sheep or cattle and pigs sharing the same pasture. Mixed grazing results in reduced exposure to parasites as a result of host specificity and reduction in effective stocking density. Annual rotational systems give good endoparasite control in cattle but the periparturient rise in faecal worm egg output by ewes can result in significant parasitism in lambs in late summer (Gray, 2002). In such situations, strategic worming of ewes at or after lambing may be needed to prevent pasture contamination and avoid clinical disease in lambs. Due to seasonal variability, organic farmers are being encouraged to monitor the endoparasite control situation on their farms. This is most easily done by carrying out strategic faecal worm egg counts on groups of susceptible animals such as lambs. This "contamination mapping" can be done by the farmer using commercially available kits or by veterinary laboratories.

Problematic areas In areas where climate and soil type permit, the integration of animals into a varied cropping and grazing rotation can be very successful. In such cases, the need for anthelmintics can be minimised. However, organic systems in less favoured areas can be problematic. The extreme example is sheep only hill and upland farms where grazing management options are limited. Epidemiological considerations mean that the control of liver fluke and lungworm is difficult to achieve by husbandry measures alone. Strategic dosing for fluke and vaccination against lungworm are used frequently.

References

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