

Workshop discusses priorities in veterinary helminthology for South Africa

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ABSTRACT

A workshop was held at Onderstepoort to set priorities in veterinary helminthology for South Africa. Representatives from 19 organisations attended. The workshop achieved 2 of the 3 aims set, namely to identify the problems within the field and to develop strategies to address these challenges. The 7 strategies proposed are: motivation, education, therapeutic, worm resistance, animal tolerance, biological control and diagnostic strategies. A follow-up session is being planned to formulate action plans for each sphere.

Key words: veterinary helminthology, worm resistance.

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BACKGROUND

'After a reason, a happening; after a beginning, an action.' (Swahili proverb)

The new National Veterinary Faculty and the amalgamated Agricultural Research Council (ARC) Onderstepoort Institutes (Onderstepoort Veterinary Institute and Onderstepoort Institute for Exotic Diseases), are together reassessing the role that they must play in addressing the priorities in veterinary helminthology. The formulation of a strategic plan for helminthology is now seen to be of the highest urgency.

A workshop was held at Onderstepoort to identify priorities in helminthology relevant to the animal and public health needs. The workshop took place at the conference centre, ARC - Onderstepoort Veterinary Institute, on 2–3 July 1999. Dr J D Bezuidenhout facilitated the workshop and used the logical framework (logframe) methodology. This approach has been compiled by the Agricultural Research Council Unit for Development Impact Analysis.

More than 30 organisations that are stakeholders in this field were invited to attend the workshop. Representatives from the Faculty of Veterinary Science, University of Pretoria, ARC - Onderstepoort Veterinary Institute, University of the Orange Free State, Food and Agricul-

ture Organization of the United Nations, National Wool Growers' Association, National Emergent Redmeat Producers' Organization, Red Meat Producers' Organization, South African Agricultural Union, South African Bureau of Standards, South African Meat Industry Corporation, South African Pork Producers' Organization, South African Veterinary Association, Bayer, Pfizer, Hoechst Roussel Vet, Logos Agvet, Schering-Plough, Fort Dodge Animal Health and Merial participated.

Working in groups or alone, each person identified problems that he/she currently saw in helminthology. According to the logframe methodology, these were grouped to form a problem tree. When the problems were rewritten in the positive, as solutions to be accomplished, an objective tree emerged (Fig. 1). The solutions were rearranged to give rise to 7 strategies that the participants identified as necessary to accomplish the goal of good worm control and, ultimately, improved quality of life. Although the strategies have been delineated, they are not independent. Rather, one needs to see elements within each as interrelated and interdependent.

The situation in South African agriculture currently requires that resource-limited-farming receives special attention. Hence 2 themes were suggested: one to focus on good worm control for resource-limited farmers (non-commercial, subsistence or previously disadvantaged) and the other on the commercial sector, which remains essential for the economy of the country¹.

Motivation strategy

Two pillars are important here:

- Support from all stakeholders, whether they are the state, parastatals, private institutions, farmers, pet owners or meat consumers.
- Sufficient capacity and expertise to be able to carry out the necessary research, diagnostics and education required by the various strategies.

To support these 2 pillars, an awareness of the animal and public health aspects of helminthology needs to be strengthened and broadened. Consensus must be reached on the definition of public good and the role that helminthology plays within this definition. A good knowledge of the socioeconomic impact of helminthiasis will support future work in this field. Priority-setting in disease control and resource management should take helminthology into consideration.

Education strategy

Relevant education and training in parasitic diseases is necessary to produce suitably equipped trainers and advisors, who may ensure that technology is adequately transferred to the end-user. This is facilitated by the availability of appropriate information material at all levels, i.e. state and private veterinarian, animal and veterinary scientist, animal health technician, extension officer, farmer and agricultural personnel.

On one level, suitably equipped trainers can ensure that farmers and pet owners are in turn informed. On a higher level, these trainers can give input to the technical decision-makers.

Therapeutic strategy

While the motivation and education strategies are seen to be relatively independent, the other strategies should be seen to aim for effective integrated worm control. This broad and complex aim was subdivided into the therapeutic, worm resistance, animal tolerance, biological control and diagnostic strategies.

It is currently widely accepted that worm control cannot be achieved without the use of worm remedies or anthelmintics. Hence there is a need for a therapeutic strategy to ensure the availability of effective anthelmintics. The

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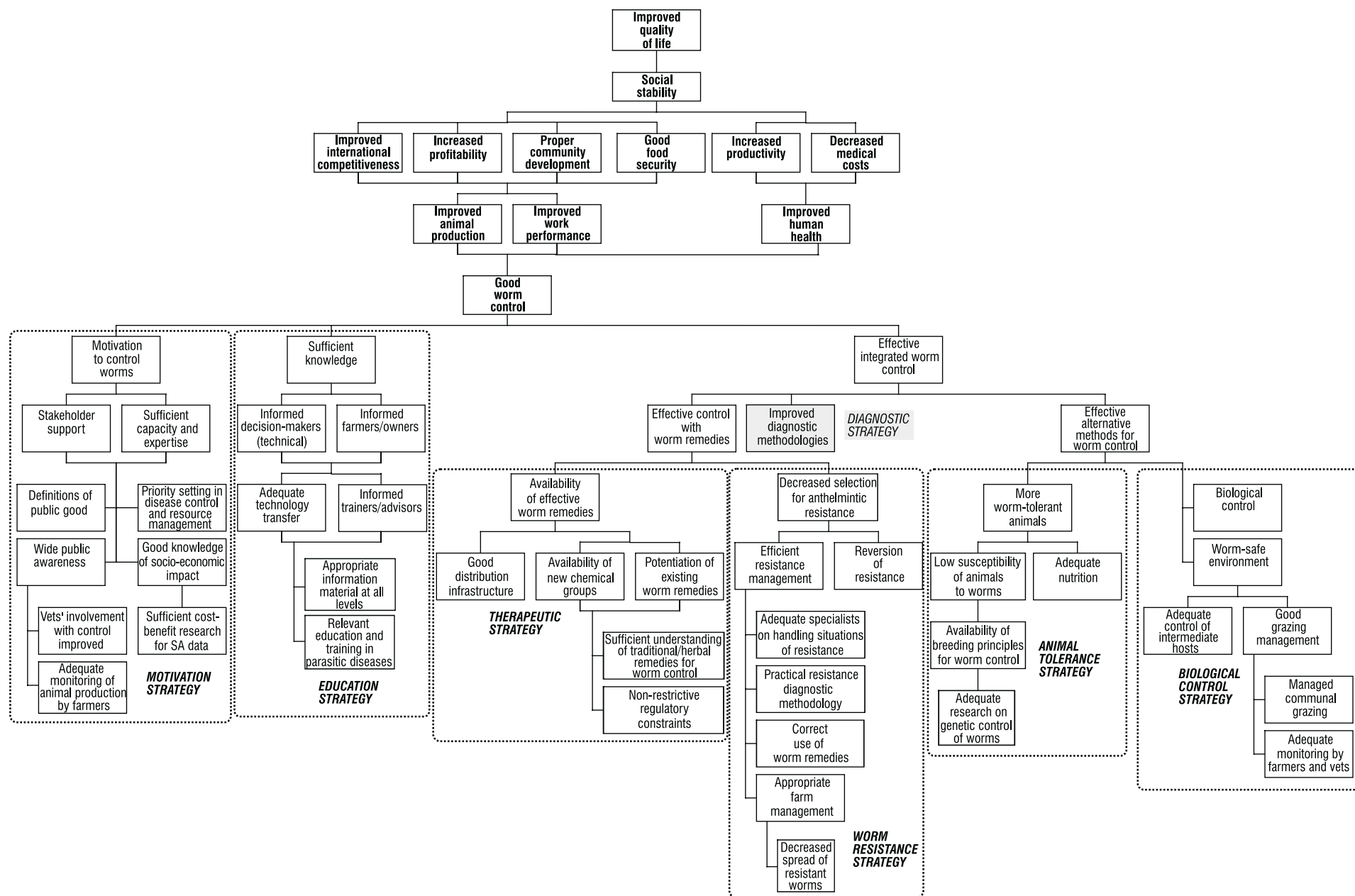


Fig. 1: Setting priorities in veterinary helminthology: logframe 2–3 July 1999 - objective tree.

development of new chemical groups, albeit extremely expensive, coupled with the potentiation of existing active ingredients, should maintain an adequate range of products. Good distribution infrastructure is, however, necessary to ensure that the products reach the end-user, especially in resource-limited areas where agricultural co-operatives are still being established.

Worm resistance strategy

The widespread occurrence of anthelmintic resistance², together with a predicted limited development of new chemical groups, was the main problem intended to be targeted by this strategy. Practical diagnostic methodology needs to be developed for detecting anthelmintic resistance in South Africa and the country should maintain an adequate number of specialists to advise in situations of anthelmintic resistance. The promotion of the correct use of anthelmintics in the context of appropriate farm management is an essential facet of farmer education that must be addressed specifically within the worm resistance strategy. Research into the use of techniques to reverse resistance where it has already established itself is a particular requirement.

Animal tolerance strategy

The longer-term vision of good worm control should aim at breeding animals that are tolerant of worms, *i.e.* able to withstand the pathogenic effects of worms without dying or showing a significant loss in production. This would encompass a deeper and more thorough investigation into the genetics of worm tolerance and the establishment of breeding principles to guide farmers towards their ultimate aim of worm-tolerant

animals. Parasitism is often associated with inadequate nutrition, and certainly the effects on production are more dramatic in animals that are not on an adequate plane of nutrition. The breeding of genotypically superior breeds must, therefore, be performed within the context of the animals' environment, which will mould their phenotype. This perhaps has special reference to communal grazing conditions, where the introduction of superior breeds may not be feasible or successful, but where improvements in the management of grazing and nutritional supplementation may assist in the control of parasites.

Biological control strategy

A biological control strategy encompasses research into the use of novel techniques to control worms, including nematode-trapping fungi, and the promotion of a worm-safe environment through the adequate control of intermediate hosts and good grazing management. Included in this strategy are research into the control of intermediate hosts of worms such as liver fluke, control of measles through their exclusion from the food chain, worm control strategies as practised by horse owners with the emphasis on the removal of faeces from camps, and the movement of animals from infective camps, at the correct time, with or without treatment with anthelmintics.

Diagnostic strategy

Diagnostics was considered of sufficient scope and importance to be assigned its own strategy and includes those services rendered directly to farmers and pet owners, as a support service to veterinarians in the field and as a part of research projects. It was felt that a diagnostic service needed to be maintained and that

specific diagnostic tests be implemented, refined or developed, as discussed above in the worm resistance strategy.

Follow-up

At the conclusion of the 2nd day of the workshop, the participants agreed that a follow-up discussion session is required and this is, therefore, currently being planned. Individuals who are interested are encouraged to contact any one of the people below:

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