FREE DIAGNOSTIC SERVICES FOR THE FARMING COMMUNITY

– Dr Chriche du Plessis

MSD Animal Health is one of the world's leading animal health companies. As a company we are dedicated to research and development, including subsequent production and marketing of innovative, high quality animal health products.

MSD Animal Health has always been a research-driven company, and is extremely proud to have the only South African company-owned research unit in South Africa. The Malelane Research Unit is situated in the beautiful Kaalrug Valley of the Mpumalanga Lowveld, 26 km from the southern border of the famous Kruger National Park. The Research Unit has South African National Accreditation System (SANAS) accreditation in both Good Laboratory Practice (GLP) and Good Clinical Practice (GCP). This fully accredited Research Unit is responsible for both local and international research and product development, with activities pertaining mostly to the development and testing of new ecto- and endoparasitic drugs.

The pastures are naturally infested with ticks and the resident cattle herd provides the ideal model for testing the activity and safety of ectoparasitic drugs. Ticks are also tested for field resistance to the various ectoparasiticides, and we urge our clients to make use of this service.

Tick resistance test and dip wash analysis services

Farmers are becoming increasingly worried that tick populations on their respective farms have developed resistance against the current products available on the market. Ectoparasiticides have base actives which belong in certain groups. At the Research Unit we test the ticks against these base actives eg. amitraz, deltamethrin or chlorfenvinphos. These base actives are a good indicator for resistance against the whole group of amidines, pyrethroids and organophosphates, respectively. Once farmers are aware of the resistance status on their farms they can make more informed decisions regarding tick management strategies and the associated use of ectoparasiticides.

To make use of this service, farmers have to collect 60-80 fully engorged female ticks before any treatment is applied to the animals. The first tick species to develop resistance is always the blue tick species (*Rhipicephalus decoloratus* and *Rhipicephalus microplus*). These are the ones that should be collected for testing and not the bont or bont-legged species. The ticks must be placed in a container between layers of tissue paper to absorb excess moisture. Ensure that the container has air holes to allow ventilation. Do not expose the ticks to excessive heat or cold and send the container to the Research Unit, together with a completed information sheet, using a courier service. If you are uncertain about any of the mentioned processes, contact your local MSD Animal Health representative to assist you in the collection.

For farmers still making use of a dip tank, we also offer a dip wash analysis service. To allow the Research Unit to determine the concentration of the active ingredient in the dip tank, please follow the next steps. Collect at least a 200 mℓ sample in a glass bottle, 30 cm below the surface of the dip tank in the main body of the tank, straight after 50 head of cattle have been dipped. Send this sample, together with a completed information sheet, to the Research Unit using priority mail, ensuring the bottle is packaged properly to avoid breakage.

In conclusion: Farmers submitting ticks for testing will receive a report indicating the resistance status on the farm, together with advice on which compounds to use. In addition, a tick management system has been developed to provide further advice to farmers based on test results. As described in the previous paragraph, users of MSD Animal Health's compounds are also informed whether their dip solutions are at the correct concentration and, if not, advised as to what adjustments should be made.

The Research Unit is also at the forefront when it comes to the testing of helminths for resistance against endoparasiticides.

Faecal egg count reduction tests and liver fluke diagnosis

Wireworm resistance is probably any sheep farmers' worst nightmare and is increasingly also becoming their unfortunate reality. Faecal egg count (FEC) reduction test results are used to advise farmers as to which endoparasitic drugs to use, in order to ensure effective treatment. These tests rely on the concept of evaluating how well any particular product worked after dosing, by comparing pre-treatment and post-treatment FECs. To perform such a test the following procedure needs to be followed.

Collect and pool faeces from at least 10 sheep, before treating with the particular endoparasiticide you wish to evaluate. The faeces should be collected from the rectum and not picked up from the ground. Be sure to also include some of the animals lagging behind the herd and looking a bit worse for wear. Place the collected faeces in ziplock bags, remove as much of the air as possible and place the bags on ice packs. Send the labelled (farmer name and date of collection) sample with an overnight courier to the Research Unit as soon as possible. The ice packs will ensure that the eggs do not hatch. Remember to complete the information sheet and include it with the sample.

As soon as the faecal samples have been collected, the sheep can be treated with your choice of product. Wait 10 days and repeat the faecal sample collection process described above. Clearly state on the information sheet and ziplock sample bag label that the sample was collected 10 days after dosing. The samples can once again be pooled and for accurate results should preferably be collected from the same individuals that provided the pre-dose samples. The report will state if the remedy chosen has reduced the number of eggs in the second sample. If the number of eggs in the second sample has increased, the active ingredient did not work and worms have likely developed resistance against this active ingredient (and hence likely also to other ingredients in the same anthelmintic group of actives tested).

Liver fluke diagnosis is performed by way of antibody Elisa tests. Blood samples need to be collected from a minimum of 10 animals. The blood should be collected in red top serum tubes and be refrigerated right after collection. The samples, together with the completed information sheet, need to arrive at the Research Unit no later than 1 day after collection, and must be kept cool on ice packs in a cooler box during transit.

It is the explicit goal of MSD Animal Health to be entirely service focused and provide South African farmers with optimal solutions to all their animal health needs. Please contact your local MSD Animal Health representative to assist in the collection of these samples, or to provide you with the information sheets mentioned above.

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