

Abstract

THE FAMACHA[®] SYSTEM - BACK TO NATURE'S BASICS

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The FAMACHA[®] (Faffa Malan Chart) system was developed in the 1990's due to the ever increasing spread of wireworm resistance to anthelmintics in South Africa. This method empowers farmers to select sheep and goats for resilience, reduces the use of anthelmintics and forms the basis for Target Selected Treatment (TST).

During a helminthological survey done in Zebras in the Kruger National Park, it was noticed that these animals were healthy and in excellent condition in spite of having worm burdens of up to 124 million. With predators in the park eliminating the weak, the saying: "Selection of the fittest" came to mind and that is where the idea of selecting animals that can survive and produce in spite of parasitism was born.

The farm Vygeboom in the Badplaas district of Mpumalanga was the ideal site to test this new approach to select resilient sheep. Mr. Cliff Wessels, the enthusiastic and helpful farmer, was keen to start the project as the only anthelmintic at that time that had some effect against wireworm was levamisole. The irrigated kikuyu pastures were a paradise for wireworm.

Mutton Merino ewes (n = 372), barren, pregnant and suckling were examined weekly for 125 days (March to July) and the following were recorded: haematocrits, ocular mucous membrane colours and faecal egg counts. Numerous photographs of the various eye colours (red-red, red, pink, pink-white and white) corresponding with the haematocrit values were taken.

Sheep were only treated with levamisole when the haematocrit reached a value of 15% or lower. During the trial period 70% of the sheep need not to be treated, 20% were only treated once, 7% were treated twice, 2% three times and 1% thrice.

A chart has since been developed. This card has illustrations of sheep eyes and membranes and colour bars, each of a different hue, from bright red, through pink to almost white, representing haematocrit values of approximately 35 (28), 25 (23-27), 20 (18-22), 15 (17-13) and 10 (12)%. The 5 categories were assigned the numbers of 1,2,3,4 and 5 representing haematocrits, which were optimum, acceptable, borderline, low and fatal respectively.

The card is accompanied by appropriate instruction manuals, training and support.

Introduction

Resistance of wireworm to anthelmintics was becoming an ever increasing problem in South Africa. Alternative strategies were sought to combat this problem.

While doing parasite surveys in Zebras in the Kruger National Park, Mountain Zebra Park and Etosha Game Park it was found that zebras had worm burdens of up to 124 million and in spite of these counts I have never seen a lean animal. With predators in the park the saying: "Selection of the fittest" came to mind and that is where the idea of selecting animals that can survive and produce in spite of parasitism was born.

Badplaas trial

Mr. Cliff Wessels had a South African Mutton Merino stud on the farm Vygeboom in the Badplaas district of Mpumalanga, South Africa. The sheep grazed on irrigated kikuyu pastures which was heavily infested with wireworm. The sheep had to be drenched regularly with all the different anthelmintic groups available at that time. The only group that could still control wireworm was levamisole.

It was decided that the only way forward was to try and select sheep that could survive and produce according to the zebra principle: "Selection of the fittest".

A total of 372 ewes were observed for a period of 125 days and regular faecal egg counts, haematocrits, colour of ocular mucous membranes, weights and body condition scores were documented.

Ewes were dosed when haematocrits reached a level of 15% or lower.

Table 1: Treatments of ewes during the trial period (March to July 1991 -125 days)

		Number of treatments per ewe (% of group)				
Group	Number	0	1	2	3	4
Dry ewes	206	83,0%	1,6%	2,4%	0,5%	0,5%
Lactating ewes	112	44,6%	32,1%	16,1%	5,4%	1,8%
Pregnant ewes	51	70,6%	21,6%	5,9%	2,0%	0%
Lactating and pregnant	3	100%	0%	0%	0%	0%
Total	372	260	75	26	8	3
(% of Total)		70%	20%	7%	2%	1%

During the trial period 70% of the sheep need not to be treated, 20% were only treated once, 7% were treated twice, 2% three times and 1% thrice.

These results formed the basis for the principle that sheep could be selected for resilience just as the zebras

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Prof. Gareth Bath will describe how the FAMACHA chart was developed and dr. Jan van Wyk elaborate on scientific trials results completed since the first Badplaas trial.