

Selective Treatment

FAMACHA



The FAMACHA[©] system

- **Named for its originator**
 - Dr Francois “Faffa” Malan
 - **FA**ffa **MA**lan **CH**Art
- **Dr Jan van Wyk, Professor Gareth Bath**
- **Dr. Adriano Vatta, Dr. Tami Krecek**
- **Jørgen Hansen, FAO**

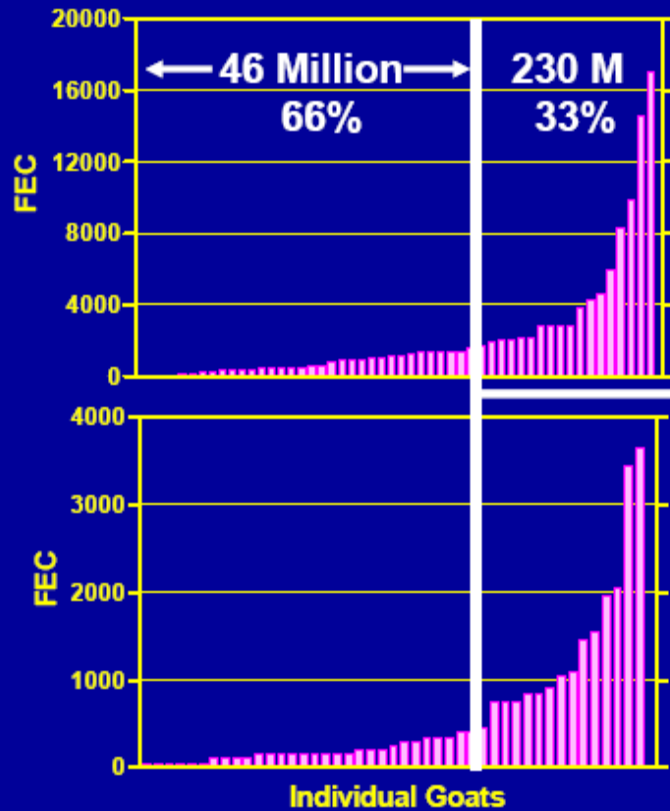
A Fresh Approach Is Needed

- Frequent application of dewormers is no longer a viable approach
- Recipe-based approach to parasite control cannot be recommended
- Effective dewormers must be thought of as an extremely valuable and limited resource
- A medically-based approach to therapy is required
- Reduced-chemical and non-chemical approaches are needed

Concept Behind Selective Treatment

- Worms are not equally distributed in groups of animals
 - 20-30 % of animals harbor most of worms
 - responsible for most of egg output

Distribution of FEC



Treating high 33%
Greatly Reduces Daily
Pasture
Contamination With
Eggs

33% of Goats
80% of Eggs

Over 1 Month:
Pasture
Contamination
Reduced By: 5.7
Billion Eggs

Refugia

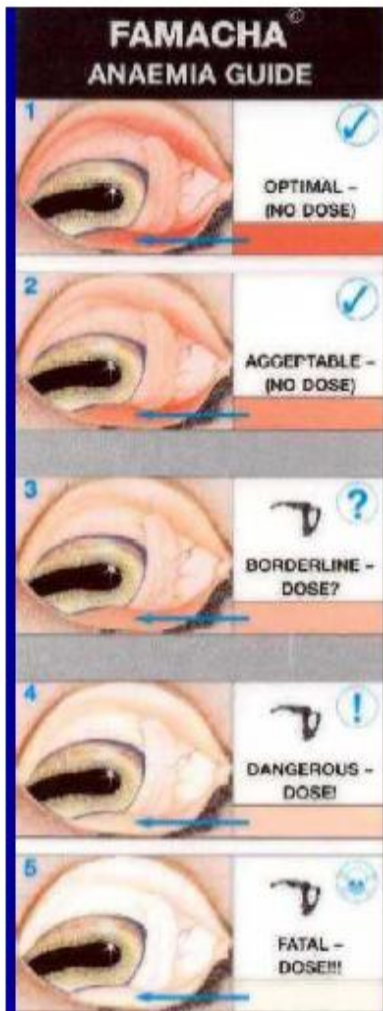
- The proportion of the population that is not selected by drug treatment
 - “In Refuge” from drug
- Provides a pool of susceptible genes
 - Dilutes resistant genes in that population
- Until recently, overlooked as the **most important component of drug resistance selection**

Impact of Selective Treatment on Refugia

- **The more of the population that is in refugia, the slower the rate with which resistance develops**
- **Selective treatment significantly increases the percent of the population in refugia**

How Do We Achieve Selective Treatment ???

- **The FAMACHA[©] system**
 - Novel technique for the assessment of *Haemonchus contortus* infection
 - Indirectly evaluate worm burden by level of anemia
 - Method of selective chemotherapy which leads to a large reduction in anthelmintic treatment

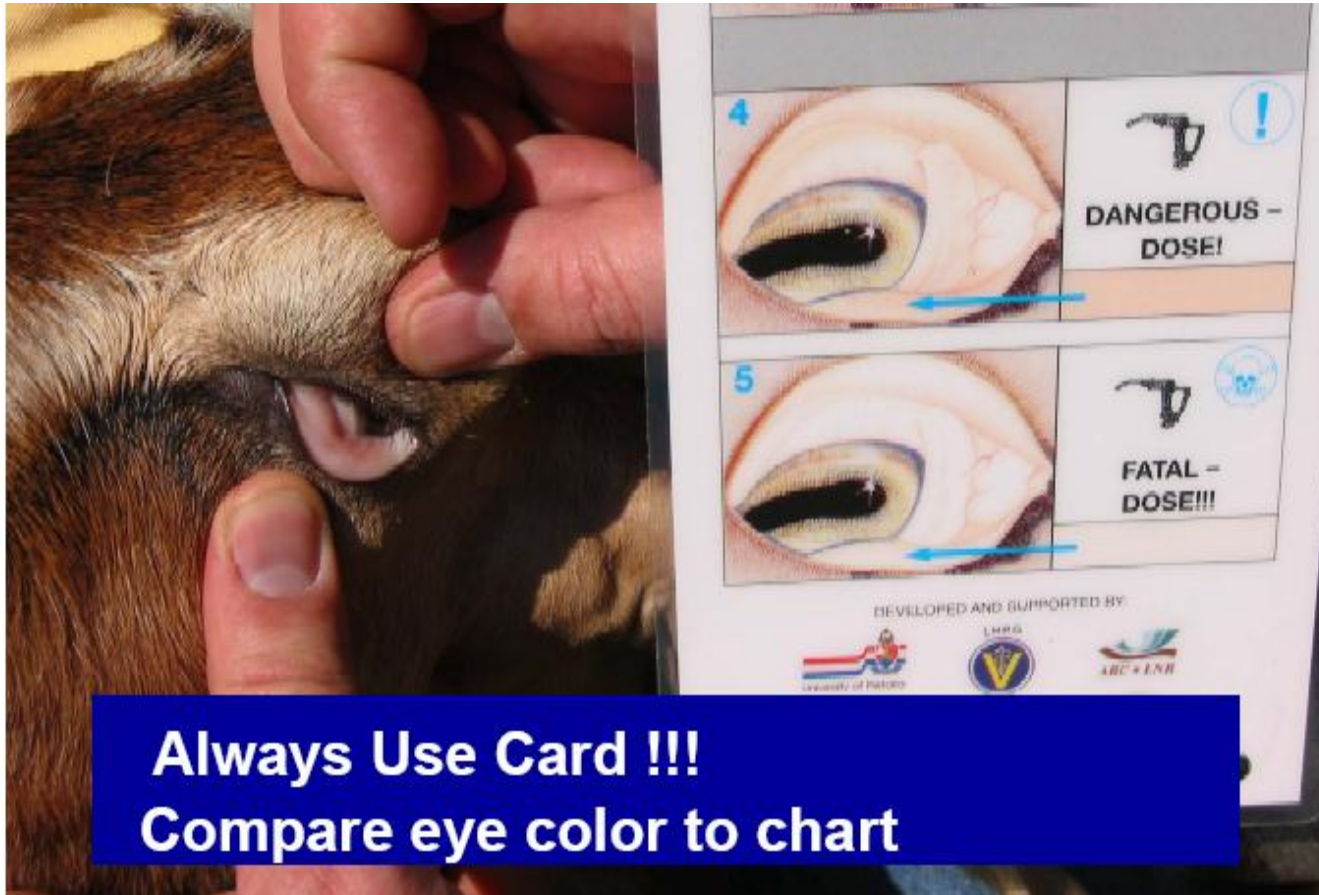


The FAMACHA[®] System

- Eye color chart with five color categories
- Compare chart with color of mucous membranes of sheep or goat
- Classification into one of five color categories:
 - 1 – not anemic
 - 5 -- severely anemic



- **Examine in sunlight**
- **Open as shown - for a short time only**
- **Look at color inside lower eyelid**



good inner eye membrane color



Anemic goat
eye membrane is white



Look here
At the membrane

Other Recommendations for Proper Use

- Check both eyes
 - Score animal based on lowest eye score
- No ½ scores
 - Assign lower whole number score if unsure
- Do not hold eye open more than few seconds
 - Wait and retry in other eye
- Keep records !!!!
 - Record numbers of animals in each category on the block histogram sheet provided
 - An easy visual record of situation in herd/flock

FAMACHA ANEMIA RECORD

Group ID: _____

Category						Totals				
	1	2	3	4	5	1	2	3	4	5
Date: 5/1 Treatment:	●●●●●●●●	●●●●●●●●	●●●●●●●●	●		15	27	12	1	0
Date: 5/15 Treatment:	●●●●●	●●●●●●●●	●●●●●●●●	✓✓✓✓✓✓✓✓		5	22	20	8	0
Date: 6/1 Treatment:		●●●●●●●●	●●●●●●●●	✓✓✓✓✓✓✓✓	✓	0	18	25	11	1
Date: Treatment:										
Date: Treatment:										

● Counted

✓ Counted and Treated

✗ Bottle Jaw - Treated

Precautions

- **Paleness or reddening of the eyes may have other causes**
 - **Other causes of anemia:**
 - Other parasites
 - Nutritional deficiencies
 - Other diseases
 - **Other causes of redness:**
 - Environmental conditions
 - Other diseases
 - Infectious eye diseases

FAMACHA

- Use as guide to determine which animals to treat
 - Significantly reduces number of treatments given when compared with conventional drenching practices
 - Should significantly decrease the rate of development of anthelmintic resistance
- Only useful where *H. contortus* is the primary parasite species

Precautions

- Only properly trained persons should apply the FAMACHA[®] system
- The card is an AID in the control of *Haemonchus* only
- Maintain management-based worm control measures
- The system is best used by producers where back-up assistance is available from a veterinarian

Precautions

- Examine at least every 2-3 weeks at beginning of “worm” season
- Examine weekly during critical periods
- **Replace card after 12 months' use**

Integrating the FAMACHA[®] System

- If there are none in categories 4 or 5, then safe
- Re-examine two weeks later if in *Haemonchus* “season”
- In cooler times of year every 4 to 6 weeks may be sufficient
 - Gain experience
 - Be careful

Integrating the FAMACHA[®] System

- **If >10% of flock/herd in categories 4 and 5, consider treating 3s as well**
 - **May choose a less effective wormer for the 3s**
- **Change pastures if possible**
 - **Do not treat all animals before move**

Integrating the FAMACHA[®] System

- **Examine especially animals which lag behind the flock/herd**
- **Check for animals with “bottle jaw” and treat these, regardless of whether they look anemic or not**

Other Advantage of Selective Treatment (FAMACHA)

- **Identify animals that need treatment most often**
 - **These are the ones contaminating the pasture for others in the herd/flock**
 - **Cull these and improve genetics of resistance of the herd/flock**
- **You now have a measure for determining start and severity of worm transmission**
 - **Will change from yr to yr depending upon weather**

Where Do I Get FAMACHA Cards ???

- By request of Professor Bath in South Africa, only properly trained lay individuals can purchase the cards
 - Sanctioned Training Workshop
- Through a veterinarian
 - Vets expected to train themselves before training others
- Information at famacha@vet.uqa.edu