

Why and How To Do FAMACHA[®] Scoring

The FAMACHA[®] system was developed in South Africa to estimate the level of anemia in sheep and goats associated with barber pole worm (*Haemonchus contortus*) infection and use that information to make deworming decisions.



Figure 1. Barber pole worm
(*Haemonchus contortus*)

The barber pole worm (Figure 1) is the most important gastrointestinal nematode (GIN) parasite affecting sheep and goat production on pasture. It has a small “tooth” that lacerates the animal’s stomach (abomasum) wall, and it feeds on the blood that is released. This can result in anemia, or a reduction, below normal, in the number of red cells in the blood.

The FAMACHA[®] system was introduced to the U.S. by the American Consortium for Small Ruminant Parasite Control (www.acsrpc.org). It is a tool that matches the color of the eye mucous membranes of small ruminants with a laminated color chart showing 5 color categories that correspond to different levels of anemia (Figure 2). Category 1 represents “not anemic”, with category 5 representing “severely anemic.”

The FAMACHA[®] system is an important tool in identifying and selectively deworming sheep and goats susceptible to barber pole worm infection. Selective deworming minimizes drug use and slows the development of drug resistant GIN parasites. It can also aid in selective breeding decisions by identifying those animals that are most susceptible to barber pole worm infection.

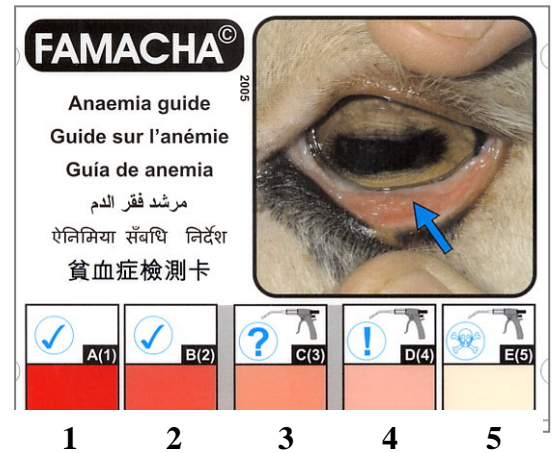


Figure 2. FAMACHA[®] card.
www.acsrpc.org

Precautions

- FAMACHA[®] is only applicable where the barber pole worm (*H. contortus*) is the main GIN parasite causing clinical disease.
- Redness of the ocular membranes can be caused by eye disease, environmental irritants, and systemic disease. Though they are uncommon, these conditions can mask anemia.
- Other causes of anemia exist, but they are uncommon compared to barber pole worm infection during the grazing season.
- An elevated FAMACHA[®] score is not the only reason to deworm an animal. GIN can play a role in other signs of disease including:
 - Diarrhea
 - Bottle jaw
 - Poor body condition
 - Dull hair coat or abnormal fleece
 - Exercise or heat intolerance

General guidelines for using the FAMACHA[®] card

- Always check eyes outside in direct, natural light. If options are limited due to handling needs, an area of the barn where natural light enters directly in the morning or afternoon (such as a door or window) is acceptable. When scoring, there does not need to be bright sunshine, but it should be performed in full daylight.
- Always use the card when scoring your animals and do not try to score from memory of the colors.

How to examine your animals with the FAMACHA[®] card:

- Proper FAMACHA[®] scoring technique includes exposing the lower eye mucous membranes and matching them to the equivalent color on the FAMACHA[®] card (Figure 3). **COVER, PUSH, PULL, POP** is a 4-step process describing the proper technique.



1. **COVER** the eye by rolling the upper eyelid down over the eyeball.
2. **PUSH** down on the eyeball.
3. **PULL** down the lower eyelid.
4. **POP!** The mucous membranes will pop into view. Make sure that you do not score the inner surface of the lower eyelid, but rather score the bed of mucous membranes.

Figure 3. FAMACHA[®] scoring a goat. The lower eye mucous membranes are exposed and compared to the colors on the FAMACHA[®] card to estimate the level of anemia. Use the COVER, PUSH, PULL, POP! method described above.

- Match the color of the pinkest portion of the mucous membranes to the FAMACHA[®] card.
- Make sure that you do not shade the eye with your body.
- Be quick – make your decision and move on. The longer the mucous membranes are exposed, the redder they get. Go with your first impression.
- Repeat the process and score the other eye because it may be different. Use the higher score and err on the side of caution.
- There are no half numbers!

Interpreting the FAMACHA[®] results

Animals in FAMACHA[®] category 4 & 5:

- Always deworm sheep & goats in categories 4 & 5.

Animals in FAMACHA[®] category 1 & 2:

- Don't deworm 1's & 2's unless there is other evidence of parasitic disease such as the presence of diarrhea, poor body condition, dull hair coat or abnormal fleece.

Animals in FAMACHA[®] category 3:

- Consider deworming if:
 - >10% of flock/herd scores a 4 or 5.
 - Lambs and kids (usually recommended).
 - Pregnant or lactating ewes/does (usually recommended).
 - Animals in poor body condition.
 - Concerned about an animal's general health and well being, for example, if an animal is in poor body condition, or suffering from another disease.
 - Always err on the side of caution.

How often do I monitor?

If <10% of herd/flock scores in categories 4 or 5:

- Every 2 weeks during the grazing season. Susceptible animals can go downhill rapidly when worm numbers are high (warm, moist conditions / summer months).
- During spring and fall, when temperatures are cooler and the barber pole worm may be less active, this interval could be extended to 3-4 weeks.
- During winter the interval can be extended, but remember that ewes/does may develop problems with the barber pole worm when lambing/kidding coincides with arrested parasites resuming development, and they should be checked more often.



If >10% of flock/herd scores in categories 4 or 5:

- Recheck weekly
- Treat all 3's
- Change pastures (if possible)

Anemic animals recover most quickly if they are removed from heavily infected pasture. If animals are dewormed and turned back out on the same pasture that first led to disease, they may take an extended period to return to a score of 1 or 2 since they will continue to be re-infected by the larva on pasture. It is okay to re-treat those animals based on FAMACHA[®] score.

Maintaining the FAMACHA[®] card

- Store in dark place when not in use because the card will fade with time.
- Replace card after 12 to 24 months of use (varies depending upon use and storage conditions).
- Keep a spare card in a location protected from light (compare with the card in use).
- Training is required to gain the initial card. Contact your veterinarian, your local Cooperative Extension small ruminant specialist or the American Consortium for Small Ruminant Parasite Control (www.acsrpc.org) for more information. Replacement cards can be obtained through the University of Georgia (famacha@uga.edu), your veterinarian or your FAMACHA[®] trainer.

Recordkeeping

Keep records of FAMACHA[®] scores and other parasite monitoring performed on your animals each year. FAMACHA[®] cards come with a recordkeeping template, or view our project recordkeeping sheets available on our website.

For more information, including our demonstration video on FAMACHA[®] scoring, visit our website: <http://web.uri.edu/sheepngoat>. The video can also be viewed directly from the URI YouTube channel page (**UniversityOfRI**): <https://www.youtube.com/watch?v=I5rcuvVG56Q>.

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