

AASRP Guide to American Consortium for Small Ruminant Parasite Control (ACSRP) Resources

Appropriate parasite management programs utilize evidence-based evaluations to assess the effect of parasite burden on patient health and determine whether or not to employ a parasiticide. Some animals are genetically more resistant to parasite infection and can maintain a low parasite burden while remaining clinically healthy. Animals with low parasite burden do not need treatment, whereas clinically affected animals do. Treating only clinically affected animals minimizes the amount of parasites exposed to dewormers which, in turn, mitigates development of resistance. Worms that have not been exposed to anthelmintics are referred to as refugia. Maintaining a high proportion of these parasites among a farm's worm burden is essential for diluting resistance genes and maintaining effectiveness of anthelmintic therapies. The American Consortium for Small Ruminant Parasite Control (ACSRPC) has a database of knowledge, recommendations, and resources for parasite management. This document is a road map for veterinarians and producers for navigating these resources.

FAMACHA© Score

The FAMACHA© system uses a visual tool for evaluating the color of the ocular mucosa as a proxy for anemia status. Though anemia may be attributed to other causes, it is closely correlated with some parasitic infections, such as *Haemonchus contortus*, the most prevalent GI parasite of small ruminants in the United States. This system is a valuable screening tool for small ruminants and camelids to identify individuals with clinically relevant parasite burdens.

Veterinarians and producers can obtain access to online FAMACHA© certification training at: <https://www.wormx.info/online-famacha-certification>
Download FAMACHA© Anemia Record templates here:
https://www.wormx.info/files/ugd/6ef604_5334728ac2e5484285959b8894822182.pdf

Order FAMACHA© Score Cards here:
https://www.wormx.info/files/ugd/6ef604_e8083c98e3cf42468b580acccdaed6f9.pdf

Five Point Check©

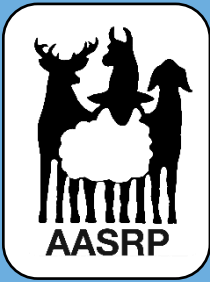
This is an evaluation tool that provides a more comprehensive evaluation of hoof stock than FAMACHA© scoring alone to assess risk of clinically relevant parasite infections. This assessment can help to detect multiple types of



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internal parasites or non-parasitic pathologies based on evidence of anemia, low protein levels, poor body condition, diarrhea, and nasal discharge.

Check Point	Observation	Possible Causes
1. Eye	Anemia (FAMACHA® score)	<i>Haemonchus</i> , liver fluke, malnutrition, other diseases
2. Jaw	Edema (“bottle jaw”)	<i>Haemonchus</i> , liver fluke, other protein-losing diseases
3. Back	Body condition score	<i>Teladorsagia</i> , <i>Trichostrongylus</i> , nodular worm, other worms, malnutrition, other diseases
4. Tail	Soiling (diarrhea)	<i>Trichostrongylus</i> , <i>Teladorsagia</i> , nodular worm, other worms, other diseases
5. Nose	Discharge	Nasal bots, lungworms, pneumonia, other diseases

Source: American Consortium for Small Ruminant Parasite Control – Targeted Selective Treatment

Learn more about the Five Point Check®:

https://www.wormx.info/files/ugd/6ef604_73cfd269465647fbb741de87890395aa.pdf

Five Point Check® handout for clients:

https://www.wormx.info/files/ugd/6ef604_257994a38215450eb936111fadfebbda.pdf

Fecal Egg Count:

Fecal egg counts (FEC) can be useful for identification and quantification of intestinal parasites. This examination can be performed on individual animals or on a subset of animals in large flocks where full clinical assessment of individual animals is not feasible. Treatment thresholds based on this test should be determined on an individual farm basis with the help of the veterinarian of record for that facility. *H. contortus* is generally of highest priority for small ruminants, and collection of samples for FEC should occur no less than 45 days post-partum or after animals have been let out on pasture. Approximately 2-4 grams of fresh feces should be collected directly from the patient’s rectum for sampling and assessment of FAMACHA® score at time of collection is recommended. Fecal egg counting may be performed on-farm if employees are properly trained. Several labs across the United States offer low-cost options for this service.

FEC can also be utilized for evaluation of anthelmintic resistance via the Fecal Egg Count Reduction Test (FECRT). Resistance may be present when there is not a significant reduction in FEC from treated animals before and 10-14 days after treatment. Remember that at least 10 animals should be assessed to get an accurate evaluation of response to treatment.



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List of laboratories that perform fecal testing for ruminants:

<https://www.wormx.info/feclabs>

How to perform FEC testing:

https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0006/749292/DIY-worm-egg-counts-livestock-incl-poultry.pdf

Why and how to do sheep and goat FEC:

https://www.youtube.com/watch?v=ZZQymZKe_hs

Drug Selection

When clinical evaluation warrants treatment, ACSRPC recommends targeted combination deworming therapy for parasitized small ruminants. Combining multiple dewormers with different mechanisms of action provides higher efficacy for killing worms than single drug therapy. Oral dosing of anthelmintics is preferred as this provides the highest concentration of drug at the target site: the GI tract. It is essential to ensure that all medications are within the labeled expiration date and that each animal receives an appropriate dose. Using a scale to weigh animals instead of estimating or using weight tape is the most accurate method for calculating an appropriate dose of medication.

ACSRPC Proper Use of Dewormers:

https://60f7303d-ac52-4cac-b7fb-6050f500b0b6.filesusr.com/ugd/6ef604_26d7565ceac447ba9af4228f8e0a3755.pdf

Dewormer chart for goats:

https://60f7303d-ac52-4cac-b7fb-6050f500b0b6.filesusr.com/ugd/6ef604_10b6513cd8ce421082276922b4ba75ca.pdf

Dewormer chart for sheep:

https://60f7303d-ac52-4cac-b7fb-6050f500b0b6.filesusr.com/ugd/6ef604_a6acb65b86ca4491bfaf101c160703f6.pdf

Dewormer chart for camelids:

https://60f7303d-ac52-4cac-b7fb-6050f500b0b6.filesusr.com/ugd/6ef604_6387698a63fd401aa1583f18a3151be5.pdf

Prevention Strategies

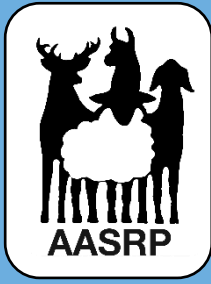
Copper Oxide wire – Copper oxide wire particles (COWP) may be effective as a method of prevention for *H. contortus*. Research has shown that COWP is capable of killing adults of this species, however it does not affect other life stages. COWP has also demonstrated an additive effect with traditional dewormers in some studies. Toxicity is a risk, however, and copper status of the herd or flock should be assessed before use. Cattle boluses can be



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purchased and repackaged into gel capsules for administration to sheep and goats. COWP should be administered as a preventative to the whole flock and is not an appropriate treatment of clinically affected animals. Please note that these recommendations only apply to copper oxide wire and not to copper supplements.

Copper oxide wire recommendations:

https://www.wormx.info/files/ugd/6ef604_10cb6517fbab453b8ac787c538ed92f0.pdf

Genetic management – Selective breeding can be utilized to add hardiness to a herd or flock as parasite resistance is a moderately heritable trait. Resilience is also a heritable trait, though less so than resistance. Resilience allows animals to carry a parasitic load while remaining clinically healthy. Producers should determine what percentage of their animals will be culled annually and factor deworming frequency into these decisions. Standards should be highest for stud males and foundation animals. Tracking FAMACHA© scores for individual animals over time can help to determine those with natural resistance or resilience and provide useful data for selective breeding programs.

Genetic management resources:

https://www.wormx.info/files/ugd/6ef604_e39e4fb993fc4298a0d6fb85d21791ba.pdf

<https://www.wormx.info/genetics>

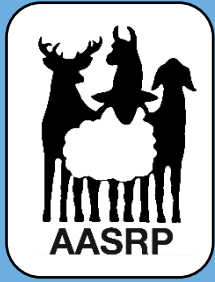
Pasture management – Intensive rotational grazing combined with high quality forages can be powerful tools for mitigating parasite issues within a herd, especially when combined with parasite-focused culling strategies. Research indicates that the vast majority of parasitic larvae do not travel more than 2.5 inches up a piece of forage. Moving animals off pasture before forage is grazed down to this height and allowing subsequent recovery time for re-growth can significantly reduce parasite challenges. Pasture re-growth may take 60 days or longer depending on geography and weather. Protecting high-risk populations such as lactating and growing animals can also pay dividends. If animals receive cut forages instead of pasture, providing feed off the ground in hay nets or mangers can prevent exposure to parasites. Frequent manure clean-out of frequently utilized areas (i.e. pens or barns) can also limit exposure to excreted parasites. Special attention should be given to birthing areas and those that house youngstock as these animals are at increased risk of illness due to coccidia as well as other internal parasites.



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Pasture management recommendations:

https://www.wormx.info/files/ugd/6ef604_71bcda722c8949b688ad05e3cb828615.pdf

<https://www.wormx.info/copy-of-management>

AASRP GUIDELINES

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