10 Ways to Control Worms

1	Zero grazing is the best great way to avoid parasitic worms, but it only works when the pen is free from vegetation, including along fencelines and waterers. Sheep/goats can be raised in total confinement, or zero grazing can be used strategically for the most susceptible animals, e.g., periparturient females and weaned lambs/kids (especially those that have already required deworming once). Zero grazing isn't the solution for coccidia since the parasite is transmitted the oral-fecal route, not via grazing (like worms).	+
2	Don't graze pastures too close. Worm larvae have limited ability to vertically migrate. It is estimated that about 80 percent of worm larvae reside in the first few inches of vegetative growth. Removing animals from pasture once the plants get too short (varies by plant species but graze no lower than 3 to 4 inches) will greatly reduce ingestion of infective larvae. Along the same philosophy, browse and other tall growing forages are preferable for goats.	✓
3	Not too long. Rotate pastures frequently. After a worm egg is deposited in the manure, it takes a minimum of 3 to 4 days for the egg to hatch and develop into infective 3rd stage larvae. Rotating pastures every 3 to 4 days will prevent animals from getting reinfected. Longer rotations may be possible under certain climatic conditions, e.g., cool and/or dry.	✓
4	Give it a rest. Sufficient rest is necessary for most of the worm larvae to die off and result in reasonably clean pastures for the next grazing event. It also gives time for the plants to recover. How long a pasture needs to rest varies by environmental conditions. In hot climates 30 to 35 days might be sufficient. Longer rest periods are usually needed in cooler climates, e.g., 2 to 3 months. To preserve forage quality, it may be necessary to clip pastures or graze with livestock other than sheep/goats.	✓
5	Protect the babies! Lamb/kid when parasites are less active. Ewes/does suffer a temporary reduction in immunity around the time of lambing/kidding. The "periparturient egg rise" often coincides with hypobiotic larvae resuming their life cycles, usually in the spring. A double whammy! Parasites will be less of a challenge if ewes/does birth in the winter or fall months (or in confinement).	✓
6	Plenty to eat. Maintain a high level of nutrition. It is well known that nutrition has a large effect on internal parasitism in small ruminants. All nutrients are important: energy (calories), protein, minerals, and vitamins. Sheep/goats in better body condition and on a higher plane of nutrition are better able to cope with a worm load. Dietary supplementation has been shown to reduce fecal egg counts and improve resilience traits.	✓
7	Not everybody. Only deworm sheep/goats that need it. Regular deworming is not recommended. Nor should all animals in a management group generally be dosed. FAMACHA©, the Five Point Check©, weight gain, and/or other criteria should be used to identify which animals require anthelmintic treatment. When a sheep/goat requires deworming be sure to give effective drugs. The current advice is to give combination treatments, i.e., the most effective drug from each "chemical" class (full doses, not mixed). Selective deworming is important to maintain effectiveness of the dewormers, as worms have become increasingly resistant. It helps to maintain "refugia" (worms still susceptible to the drugs).	✓
8	Let DNA do the job. Select sheep/goats (especially males for breeding) that are more resistant to worms Resistance is measured by fecal egg count (FEC; EPG). Twenty to 30 percent of the flock/herd is generally responsible for 70 to 80 percent of fecal egg output. Remove the heavy egg shedders. Culling animals that require frequent deworming and/or have poor FAMACHA© scores (4, 5) indirectly selects for resistance, but progress will be slower than FEC selection, as FAMACHA© scores are more of a resilience trait. FEC EBVs (estimated breeding values) are the most accurate way to select for resistance to parasites. Some ram and buck performance tests collect fecal data. There are also breeds that are more resistant to internal parasites. And sheep are usually more resistant to worms than goats.	✓
9	Sick fungus on worms. BioWorma® is a natural occurring fungus (*Dunningtonia flagrans*) that can be fed to livestock to help manage parasites. It is feed-through product that ends up in the animal's manure where it traps and consumes juvenile stages (larvae) of parasitic worms; thereby, reducing reinfection of pastures with worm larvae. BioWorma® works best to keep clean pastures clean rather than to clean-up dirty pastures. Follow the manufacturer's recommendations to get the best results.	✓
10	Cut back. It may seem like a drastic action, but sometimes it may be necessary to reduce the size of your flock/herd to keep worms in check and maintain a healthy productive flock/herd. Parasites are a numbers game. More animals means more parasites and greater challenge. Overstocking and overgrazing are the primary drivers of parasite problems in small ruminants. Too many animals. Not enough land. Dewormers aren't the answer!	+

If you can't do 2-9, you'll need to do 1 and/or 10.

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