



DO NOT LYE!

Why you should NOT use lye as a dewormer. You may have seen a suggestion on social media to deworm livestock with lye. In the social media post, water is poured onto lye in a bucket, swirled and poured onto a grain mix. Then mixed with bare hands (no gloves) and deemed ready to be fed to deworm sheep, goats, cattle or hogs.

There are many reasons why using lye as a dewormer is NOT a good idea.

What is lye? Lye is a strong alkali (can be either sodium hydroxide or potassium hydroxide), having a high pH, that is highly corrosive. That means it can burn the skin or eyes upon contact. It is often used to make soap from oils or fats (such as goats milk). Protective gloves, safety goggles and clothing are needed for safety. When mixing lye with water it can create heat and fumes that are toxic to breathe.

There are reactions in the digestive system of the animal that involve acids naturally produced in the rumen and abomasum. There are naturally produced buffers (made from salts from the diet) that keep the pH of the gut at the proper level for digestion of feeds. These digestive secretions will impact the ingested lye.

Sodium and hydroxide ions are common substances in the cellular and extracellular and gastrointestinal fluids of all living organisms. There is nothing unique about the ingredients in lye that are toxic except when giving high concentrations. The lye would need to be fed at a very alkali (caustic, which is not good) concentration to kill worm parasites, which would also burn the skin of the farmer mixing and feeding it, as well as the mucosa of the mouth, esophagus, and stomach. In the social media post, the amount of lye in the bucket of feed is small and would not be caustic enough to kill any of the worm parasites.

Secretions in the rumen that occur during digestion are huge (liters per meal). Thus,



any caustic aspect of the ingested lye would be greatly diluted by salivary and ruminal secretions, so much so that the diluted lye would have no impact on worm parasites, especially by the time it reaches the abomasum and intestine. The pancreas and other glands emptying into the small intestine produce bicarbonate, further buffering any impact of the lye.

In a lab (not in the animal) a 1% sodium hydroxide solution (lye) may be used to kill most parasites when they are exposed to it for 24 hours. The solution has a pH of over 12 (very caustic). It works via a non-specific alkaline cytotoxicity. Lye is very alkaline and basically kills all the worm cells by "dissolving" them in a really strong alkaline solution. The problem with this in practice in the animal is that you will be dissolving the sheep's gastrointestinal tract at the same time, and your sheep will probably die from the cure before the worms can kill them. Research trials must be employed on new methods to determine fecal egg count reduction in response to treatment. Fecal egg counts are an indication of worm infection. A fecal egg count reduction test was not determined with the lye treatment. In other words, there was no proof that the lye treatment was effective in reducing worm burden.



Timely Topics: Do Not Lye!

Veterinarians strongly advise against the use of lye as a dewormer in livestock because it is caustic and can cause chemical burns to the skin of the person handling it and to the gastrointestinal tract of the animal receiving it resulting in severe tissue damage. In a lab, lye can kill just about any living organism, when diluted with water and used as a drench, it has no effect on parasites. Drenching sheep with lye can cause a dangerous pH imbalance negatively affecting the animal's ability to absorb nutrients.

Consult your veterinarian for an effective deworming strategy that is both safe and effective. Alternatively, consider some of the strategies developed by the American Consortium for Small Ruminant Parasite Control (www.wormx.info):

- Low dose (0.5 to 2 g) of copper oxide wire particles can be effective against barber pole worm, or in combination with a dewormer may be effective against a mixed population of parasite worms (See: <https://surl.li/aiqvkc>)

- Feeding spores of a nematode-trapping fungus can help limit uptake of infective larvae, breaking the worm cycle (See: <https://surl.lu/kvywwn>).
- Consider changing your management, nutrition, or consider genetic selection for parasite resistant sheep (see: <https://www.wormx.info/bmps>).



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