

# **Diatomaceous Earth**

## **What is it? & What can it do?**

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Farmers and ranchers all over the country have used food grade Diatomaceous Earth (DE) for many years. Many swear by it for keeping parasites & flies under control by feeding it to their livestock.

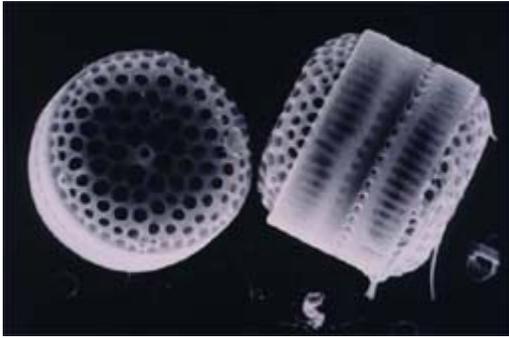
Having DE as one of your feed ingredients is very convenient. Food grade DE should not exceed (by the FDA) a ratio of 2% mixed in the feed as an anti-caking agent. Our feed is milled locally here in Texas and DE had been part of the ingredients for many years but the regulations changed & our feed formula didn't fit in the new guidelines and more paperwork was required. Unfortunately, now DE is no longer in our feed.

I have talked with other feed mills in the US that tell me there is no problem adding DE as an anti-caking agent. It takes some tweaking the formula and some extra paperwork but can easily be done.

After much research and many discussions with our local mill, the added paper work needed is not on their agenda to continue adding DE to our feed. Even though they agree most all the farmers and ranchers want it because they see such good results; they cannot use DE in our feed as an anti-caking agent and therefore it can't be added. So, we went with Plan B and found a DE that is safe and can be easily top-dressed on our feed!

### **But first, what exactly is Diatomaceous Earth – (DE)?**

Millions of years ago, in all the waters of the earth, billions of microscopic one-celled plants, called diatoms, took the minerals from the waters and created a protective shell for themselves. The fossilized skeletal remains of these diatoms accumulated in layers on lake and sea floors forming deposits of what we know today as diatomaceous earth.



Alias names for Diatomaceous Earth include:

- Diatomite
- Silicon dioxide
- Kieselgur (Europe)
- Fuller's Earth
- Fossil Shell Flour
- DE (the most common & simple name)

**DE deposits have been mined for centuries; used in hundreds of industrial and agricultural applications.**

There are two primary types of diatomaceous earth deposits –

1. saltwater
2. fresh water.

DE's are also divided into three grades:

- commercial
- feed-grade
- food grade, like in your toothpaste.

Importantly, diatomaceous earths vary greatly in something called “free crystalline silica” (FCS). Common DE's contain 8-25% FCS while commercial pool-filter grade has a whopping 55%. ***Therefore, it is vital that only food-grade DE low in FCS be offered or will be near or around animals and humans.***

Saltwater DE is commercially processed primarily as a filter aid. Beer, wine, fruit juices and vegetable oils are filtered through the diatoms' multitude of pores, acting as microscopic sieves. Swimming pool and fish tank filters utilize this commercial type material.

Saltwater DE has a high % of FCS (crystalline silica) content from a process called calcining (being exposed to high degrees of heat). It is not appropriate, in fact very dangerous to use in ingestible applications such as grain storage and or as an animal feed additive.

Freshwater DE is mined from ancient lakebeds and ideal for agricultural uses with its less than 1% FCS. Documented use of diatomite by the Chinese for pest control dates back almost 4,000 years. Due to its ability to kill insects, DE has been used in grain storage for centuries.

As awareness and concern about chemical pesticides grow, non-toxic, natural diatomaceous earth is enjoying renewed attention and interest.

Numerous farmers, ranchers and Amish tout DE as a natural anthelmintic (de-wormer), finding great success adding DE to their livestock feed to keep their goats, sheep, cattle, horses, pigs, llamas, alpacas and fowl healthy and parasite clean without the use of chemical drugs.

Important Note: Checking fecals regularly is always recommended to make sure your parasite control program is working. Don't just assume the DE is doing what you want. Some animals are in a weakened state and can be more prone to parasite infestation.

### **How Does DE Work?**

Diatomaceous Earth's mode of action for insect and parasite control is strictly mechanical. The microscopically sharp edges contact the insect or parasite, piercing their protective coating, causing them to dehydrate and die. Fly and other larvae in the poop pile are affected in the same way. We still have dung beetles around our poop piles, so the DE hasn't caused a problem for them.

You find DE in two forms:

- powder (most common form)
- granules (less dust & I believe is the best form for top dressing feed.)

DE powder form can be used as a dust for fleas, lice and other external pests by rubbing into the coat of the animal. Use only in areas with good ventilation to keep down the risk of inhaling the dust into the lungs. I have used powdered DE outside on the ground after shearing for the alpacas to roll and dust in. They love that but make sure you do this outside and not inside the barn with less ventilation.

Granular food grade DE is safe (no dust, no choking) and is the most recommended form used to top dress the feed. Some have found when using the DE granules that the internal & external parasite control will result in:

- Improvement in health
- Improvement in appearance
- Improvement in behavior
- Better assimilation of feed and lowered feed costs.

DE is an excellent and totally natural control, with no indications of damage to internal tissue.

Chemical anthelmintics currently being used have a number of drawbacks:

- Animal toxicity & lowered immune system
- Additional cost
- Milk and meat contamination
- Parasitic chemical resistance (a big problem, especially when using a de-wormer every month.)

Waiting until an animal shows signs of parasitic infestation, farmers & ranchers using chemical treatments cannot avert the stress, weight loss and lethargy that result. Prevention is always the best way to go. Feeding DE can be a great prevention choice.

Even shortly after the initial chemical dosage, parasites can begin immediate re-infestation especially to animals with weakened conditions. Chemical companies are finally acknowledging this phenomenon and now prescribe rotating their de-wormers or feeding chemical de-wormers daily. Yuck!

Do you really want chemicals cruising through your animal's bloodstream at every possible moment? All natural DE (food grade) milled in the feed or top dressed on feed provides the advantages of safety, convenience and prevention at a reasonable cost.

## **Does it work for parasite prevention?**

Yes, we believe it does and have been using DE granules top dressed on our feed for over 1 & ½ years. We are very pleased with the results. Since we check our own fecals under the microscope, we have been able to do our own research for approximately 100 alpacas here on our ranch.

Our research included checking each and every alpaca's fecal several times during the year and keeping a record with the results. It took several weeks to complete our fecal checks with this many alpacas but we wanted to know the results on our ranch before we recommended DE to clients. Checking several fecals and looking at the slides each day, we recorded the results. Our weather is so mild, even in the winter with only a few days below freezing, parasites are a concern throughout the year.

We look for the following parasite eggs on the microscope slides:

- Haemonchus contortus (the major parasite concern)
- Whip Worms
- Brown Stomach Worm
- EMAC
- Tape Worms
- Strongyles
- Coccidia

## **What about Meningeal Worm prevention?**

We don't treat for Meningeal worm because we don't have many white tailed deer (which carry the parasite) in our area. One neighbor told us the "Big Cat" keeps all the deer away! Great, that didn't make us feel better but we have only seen a hand full of deer in over 8 years here. We did hear, on the barn baby monitor, the "Big Cat" crying and calling one night but it stopped the minute the door slammed behind us running outside with our gun & spot-light.

Our 3 ranch dogs do a great job keeping all the wildlife away from the alpaca's pastures. I know other ranchers use donkeys & llamas to help keep wildlife away. I've also heard that a wide gravel path along the outside of all pastures is another prevention making it difficult for snails to cross getting into the pastures where the alpacas graze.

## **What results did we get using DE?**

After doing our fecal check research on the total herd several times during the year, we concluded that 95% of our herd was either parasite free or had a low enough egg count where NO de-wormer was needed. This is definitely better than our parasite control program in previous years.

Things to remember when checking fecals in your herd:

- One of our rules is to always check a mom that has just given birth. Several veterinarians have told us that the parasites know when to multiply at a faster rate when new life is about to happen and the herd is expanding.
- Another rule is to always check the fecal count on a female before breeding to make sure she is healthy and ready to become pregnant. It is not a good idea to find out she needs a de-wormer within the “60 day window” after breeding. And especially not a good time for the fetus in this critical stage of development to give mom chemicals that could cause birth defects, etc.

## **How do we give the DE granules?**

Food grade DE should not exceed (by the FDA) a ratio of 2% mixed in the feed as an anti-caking agent. Our daily program is within this recommendation. We use the DE granules to top dress the feed once a day during the week and no DE on the weekend. Using the DE for only 5 days during the week is how we tested the program. This weekday program used for our alpacas has made our parasite herd management so much easier!

For our herd, we use *Alpacas All Naturale' DE*. This DE is an organic material approved by OMRI and is a registered approved feed additive by the Dept. of Agriculture. It's a natural blend of montmorillonite clay with 36 trace minerals and contains less than 1% FCS.

Montmorillonite clay is a known binder of mycotoxins & protozoan. The clay doesn't break down in the digestive tract, so the impurities are retained in the clay then expelled in the manure.

We simply top dress 1 teaspoon of *Alpacas ALL Naturale' DE* to each alpaca's grain ration once a day. Since we feed in troughs, we know how much to sprinkle on the feed to equal 1 teaspoon per animal.

The DE package contains a one tablespoon scoop.  
(1 tablespoon = 3 teaspoons).

One bag will give 3 alpacas 180 one teaspoon serving once a day. If given correctly, this bag will be enough to last 9 months for 3 alpacas.

During heavy infestations of parasites, you could feed up to one tablespoon for short periods of time. Here in Texas we know that parasites tend to take off & multiply in the pastures about 2 weeks after a rain when the weather is warm. This could be a common occurrence depending on weather conditions. During this time you could increase the DE dosage for a week or two. Then stay with the program of top dressing feed using the normal recommended dosage for good prevention in your herd management.

Other warm-blooded animals, from goats to dogs, may be fed DE. We feed DE to our barn cats and ranch dogs once a week.

To purchase food grade DE granules go to: [www.alpacasALLnaturale.com](http://www.alpacasALLnaturale.com)

***The information in this article and any product mentioned is not intended to diagnose, treat or cure any animal and is not intended to replace the advice of your veterinarian. We have found that natural food grade DE granules work for our herd of alpacas, dogs and cats.***

***When animals are weak or sick, always consult with a veterinarian.***

***Frequent fecal testing is always recommended to validate your herd management program.***