

Information about Diatom (Diatomaceous Earth) Parasite Control Powder

Supplied by Flyte so Fancy Ltd (Dorset) Tel: 01300 345229



Introduction

Diatomaceous Earth has been used in Asia to control insects for 400 years. Safe for use indoors around kitchen cupboards and pantries, as well as outdoor use along foundations and in the garden. Deadly to any insect and completely harmless to animals, fish, fowl or food.

Diatomaceous Earth is a non-toxic, safe substance made from crushed fossils of freshwater organisms and marine life. It is 100% natural and is mined from the ground. It comprises the fossilised remains of diatoms (a type of algae). These plants have been part of the earth's ecology since prehistoric times. *This product is not for human consumption.*

The diatoms have a hard shell made of non-crystalline silica, which does not decompose in the lakes and seas where diatoms live. Thus over long periods of time large volumes of diatoms are exposed on the surface from dried out lakes. Crushed to a fine powder and observed through a microscope, the particles resemble bits of broken glass. Most insects have a waxy outer shell covering their bodies, Diatom scratches through this shell causing the insect to dehydrate leading to eventual death. Diatom controls insects by physical means, not chemical, and thus has no chemical toxicity. The diatom material is then ground and screened into various grades, for the countless uses in today's products and processes, from toothpaste to cigars, plastics to paprika, filter media in swimming pools to home fish tanks, as well as insect and parasite control in animals and grains.

IMPORTANT: Do not confuse this Diatom with the type sold by swimming pool suppliers as a filtering agent. That kind has been subjected to a heat treatment that dramatically increases its crystalline silicate content and makes it unsuitable for use with foodstuffs. The Diatom that is needed for food use has not been heat-treated and has crystalline silica content of no more than 1-1.5%. Diatom is a natural grade diatomite, it requires no warning label on the container. However the continual breathing of the dust should be absolutely avoided.

Diatom can control Red-Mite in Poultry Houses if it is thoroughly applied to walls, floors, perches and nest boxes/cages at 50g per square metre. A 2kg tub treats 1,800 sq ft. Diatom is odourless and non-toxic so poses no danger to the birds. The Diatom is applied where insects live and move and will be picked up on the insect's exoskeleton by static electricity. Diatom, through abrasion, cuts into the insect's cuticle and once exposed the insect can no longer retain its moisture and so dies. Unlike chemical pesticides results are not instant but may take several days, however the advantage of a natural product is that there is no egg withdrawal period necessary for poultry.

General Advice for Use

When used at recommended rates Diatom has been effective against ants, aphids, bollworm, slat marsh caterpillar, cockroach, clothes moth, cornworm, earwig, house fly, fleas, fruit fly, leaf perforator, leaf hopper, lygus bug, mite, greenfly, blackfly, red mite in poultry, pink boll weevil, red spider mite, boxelder bugs, carpet beetles, centipedes, ticks, millipedes, silverfish, slugs, snail and many other insects as a natural pest control method.

Use in cracks, crevices, hiding and running areas, behind appliances and wall and floor surfaces. It can be expected that most insects will die from contact with Diatom within a few days and it can also have a very good long-term residual effect. Can be safely used in the home, in offices, food preparation establishments and schools etc

Control will be reduced if the Diatom is exposed to high relative humidity (75% or above) and the diatom shells take in moisture, but when the Diatom dries out again it will still be as effective. It is good to consider insect life cycles when applying Diatom to coincide with larval/pupae stages becoming adult. Long term protection and control of insects can be achieved, and because of the 'physical means' of control, not chemical, the insect cannot build up a resistance in future generations. It has most effectiveness on larvae and adult insects with a fair amount of soft tissue exposure.

Indoor and Outdoor application: Sprinkle a light layer of Diatom in areas where pests frequent, including under cookers, cabinets, sinks, dustbins, window and door frames and sills, entrance ways, sewer pipes and drains and in cracks and crevices. Repeat treatment as needed.
For carpet beetles: Thoroughly dust along skirting boards, carpet edges, under furniture, carpets and rugs, and in closets and shelving.

For Fleas: Thoroughly dust carpets and pet's bedding and sleeping areas. It can also be rubbed into pets fur.

For Flies: Thoroughly dust areas where flies frequent, straw bedding, and livestock pens. Can also be applied to livestock coat as an insect repellent/ contact insecticide. It has been noted that when used as a wormer for cattle, the undigested Diatom passes through with the manure and reduced fly hatching has been observed in cattle fed on Diatom.

In the Garden: 100% natural product used as an effective barrier against Slugs and Snails. Sprinkle around flower and vegetable gardens. If getting saturated effectiveness will be reduced, but once dried out will continue to work as before.

Internal Parasite Control:

Diatom has been used for at least two decades as a natural wormer for livestock. It is believed that the DE scratches and dehydrates internal parasites. Some scientists believe that the Diatom is a de-ioniser or de-energiser of the worms or parasites. Regardless of the method of operation, farmers report definite control. For effective use, the Diatom must be fed long enough to catch all the newly hatching eggs or cycling of the worms through the lungs and back into the stomach. A minimum of 60 days is suggested at 2% of dry weight of the grain ration. Caution: do not give to very small pregnant animals such as cats, guinea pigs etc. and do not feed continually to babies or very small adult animals such as cats or hamsters etc. The material may be fed on a continuous basis to larger livestock for continuous parasite control and mineralisation, which is the next major use.

Diatoms mode of action for insect and parasite control is strictly mechanical. The microscopically sharp edges contact the insect or parasite and pierce their protective coating so they soon dehydrate and die. The larva is affected in the same way. This makes Diatom an excellent and totally natural control with no mechanical or chemical damage to the animal tissue. For poultry there is no egg withdrawal period needed. It can be used as a dust for fleas, lice and other external pest by rubbing into the coat of the animal. Both internal and external parasite and insect pest control with result in improvement in health, appearance and behaviour as well as assimilation of feed, which means improved weight gain and lowered feed costs.

Diatom can also be used as an animal feed additive for cows, calves, horses, sheep, goats, pigs, rabbits, chickens, turkeys, ducks, dogs, cats, pigeons and other pet or farm animals.

Animal use: suggested feeding and application rates

Beef Cattle: 1% of total weight of dry ration, 5% in grain

Dairy Cattle: 1% of total weight of dry ration

Calves: 4g in morning milk per calf

Chickens and other Poultry: 5% in feed, use at full strength in dusting boxes and nest boxes.

Hogs: 2% of total feed ration, dust on bedding and animals

Horses: 5 oz in daily feed ration

Sheep: 1% in ground grains, 1 part Diatom to 2 parts T-M Salt

Goats: 1% in grain, 5% per bushel of feed, up to 50% in T-M Salt

Dogs: 1 tbs per day in daily ration for dogs over 55lbs, 1 tsp per day in ration for small dogs and puppies. Rub powder at full strength into the coat for fleas and sprinkle on bedding

Cats: 1 tsp per daily ration, rub at full strength into coat for fleas and sprinkle on bedding

Minerals:

What about the mineral content of Diatom? If oyster shell meal provides calcium, then finely ground Diatom may also provide a broad-spectrum of naturally occurring chelated minerals. These include calcium, magnesium, iron, phosphate, sodium, titanium, potassium and others. Numerous reports of gain have been noted when adding Diatom to a ration. With lack of mineralisation in modern grains it isn't hard to conceive of mineral benefits from a finely ground natural mineral product. An Alabama study on hogs showed complete stopping of wood feeder chewing when Diatom was added to the feed ration. Feeding at 2% of grain ration can take care of both deworming and mineralization.

Diatom is a natural product with many elements, which include: Silicon Dioxide 83.7%; Aluminium Oxide 5.6%; Iron Oxide 2.3%; Calcium Oxide 0.4%; Other Oxides 1.9%

Diatom has a unique combination of physical properties -

High Porosity: Up to 85% of the volume of Diatom is made up of tiny interconnected pores and voids.

High Absorption: Diatom can generally absorb up to 1 times its own weight in liquid and still exhibit the properties of dry powder.

Particle structure/ high surface area: Diatom particles are characterised by their very irregular shapes, generally spiny structures and pitted surface area. The average only 5 to 20 microns in diameter yet have surface area several times greater than any other mineral with the same particle size. These features, it is believed, are what make it an ideal mineral for internal parasite control in animals.

Available from Flyte so Fancy in the following sizes of sealable plastic tubs: 1kg, 2kg, 5kg, 10kg and 15kg

Thank you for purchasing from www.flytesofancy.co.uk
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To place orders or for advice call 01300 345229

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DIATOMACEOUS EARTH: A NON-TOXIC PESTICIDE
MACDONALD J. 14, 42 (May 1986) by Professor Stuart B Hill
Department of Entomology and Ecological Agriculture Projects.

For centuries stored grain has been protected from insect attack in much of the less developed world by adding some form of powder or dust to it. Common materials include plant ash, lime, dolomite, certain types of soil and diatomaceous earth.

With the introduction of synthetic pesticides in the 1940s, and the modern fumigants some time later, it was felt that a scientific solution to pest problems had been found. Although these materials provided enormous local benefits, a number of problems are beginning to be recognised. These include the development of resistance by insects, pollution of the environment, contamination of foodstuffs with residues, and exposure of users to toxic chemicals. This has led a small group of researchers and developers to look again at the different powders to see which are most effective and how they can be improved.

Probably the most effective naturally occurring protective powder is diatomaceous earth. This is a geological deposit made up of the fossilized skeletons and tests of siliceous marine and freshwater organisms, particularly diatoms and other algae. These skeletons are made of hydrated amorphous silica or opal. When crushed they break up into tiny pieces of 'glass' (so tiny the material feels like talcum powder). The hairy bodies of most insects easily pick this up whereupon it scratches through their protective wax layers and they also absorb some of this material, the result being that the insects lose water rapidly, dry up and die. Further protection is provided by the powders property of repelling many insects. A similar principle probably accounts for the fact that birds frequently take dust baths, presumably to rid themselves of parasites.

It was not until the late 1950s that the first commercial formulations of it became widely available and between 1963 and 1970 the Us Dept of Agriculture conducted a series of studies of Diatom.

In several tests, DE gave better protection of grain than malathion, particularly over the long term, without exposing anyone to the dangers of toxic chemicals. At that time relatively large amounts of DE were added to grain to provide protection. The main problem with using this amount was that it tended to make the grain very dusty and it reduced its flow rate and test weight.

Today this problem has been greatly reduced through the use of improved DE formulation that contains baits and attractants. Such formulations have been developed and tested in Quebec through the collaborative work of Arthur Carle and myself. Using Ncr, one of these formulations, as little as 0.5kg/tonne may provide full protection. Despite this very little grain in Canada is treated with De formulations. One of the main reasons for this is the present regulations prevent the adding of any powder to grain destined for export. Until such rules are changed the full potential of DE will not be realised. This is especially frustrating in the case of grain going to developing countries as aid. While this grain may be pest-free when it leaves Canada, insects often rapidly invade it when it reaches its Third World destination. It is not uncommon for 20% of this grain to be then lost to pests. If DE had been added prior to export, however, would have been protected indefinitely. Fortunately, DE can be added to domestic grain as long as it does not pass through licensed elevators. It can also be used in grain and food handling and storage areas such as flour sills, empty grain bins, box cars, ships' holds, warehouses, food processing plants, etc.

In houses it can be used effectively to prevent the entry of certain insects such as earwigs, ants and cockroaches. In all of these examples it is important to place a small amount of the powder in corners, cracks, crevices and other areas where insects may hide.

Whereas with a contact pesticide the insect dies quite quickly, with De control may take several days. The important difference is that the effect of the protection provided by the chemical is short-lived whereas De will control the pests as long as the powder remains. In this respect DE is an ideal pesticide it is residual but non-toxic. The only health precautions that need to be taken are that if a large is being treated with a power duster, then you should wear a mask to prevent inhalation. Because DE is made up of silica, people sometimes mistakenly think that De causes silicosis. As indicated above, however, pesticide quality DE is usually over 97% amorphous silica, which does not cause silicosis, which is associated only with crystalline silica. Indeed, inhalation of road dust and grain dust IS likely to be more harmful than DE.

In the field DE has potential in certain restricted uses such as treating the bark of fruit trees in spring using an electrostatic duster, or the roots of plants when transplanting, but because it is non-selective and also kills beneficial insects, its use here should be carefully controlled.

Another use is in animal production units for the control of external parasites and flies. This is achieved by dusting the animals and the litter or bedding area. It has also been included in the diet to control certain internal parasites and this practice is said to result in lower fly populations in the resulting manure.

In the future, improvements in the formulation of DE to reduced dustiness and more effectively lure insects to it to ensure their rapid exposure will no doubt extend its use. In the meantime, it is perhaps the safest effective pesticide for use in the home and has a valuable place in the protection of stored food and control of insects in animal production units.