

Diatomite: A Product for our Times

In these days of climate change-induced water shortage, declining soil quality and increased pollution caused by toxic pesticides, diatomite offers a unique, environmentally sustainable approach to combating these problems.

The Mt Sylvia Diatomite Mine, located 95 kilometres west-southwest of Brisbane, is one of the highest quality diatomaceous earth deposits in Australia.

Mount Sylvia Diatomite Pty Ltd purchased the mine and associated processing plant in November 2005. As the new owners, the objective has been to improve both the efficiency of the plant as well as the quality of the products produced.

This has been achieved by improving the quality controls at the mine face and by replacing a forty year old kiln. The company is committed to examining new uses for its products particularly in the area of agriculture.

Diatomite is a sedimentary earth made up of siliceous fossils of plant algae (diatoms) originally laid down in a fresh water or marine environment. It is light in weight, chalk-like in appearance and very porous.

Diatomite is primarily amorphous silica and is distinct from crystalline

silica or quartz. Amorphous silica is much more soluble than crystalline silica and is not a health hazard.

Mt Sylvia Diatomite produces a variety of products. Purasil, our raw uncalcined diatomite is used as a soil conditioner to provide plant available silica and improve cation exchange capacity.

It is used on golf courses, sports fields and in landscape projects to improve porosity and drainage of soils and to promote the health of the plant's root system. Many benefits are derived from using silica.

Like calcium, silica strengthens cell walls resulting in more robust and efficient plants. Silica improves brix levels and therefore flavour. Plants produce more flowers and pollen is more viable resulting in a better fruit set.

All other products from our plant have passed through our rotary kiln. The heating process does not exceed the temperature necessary to convert amorphous silica to crystalline silica.

Mt Sylvia Diatomite produces a number of coarse screened products such as Kleensorb and Nursery grade. They are primarily used as absorbents such as pet litters, industrial spillage absorbents, and in domestic uses such as barbecue trays. These products can absorb over 200% of their own weight in water. When added to potting mixes they have the ability to hold water, create aeration and provide plant available silica.

Molodri is a blend of liquid molasses and diatomite (approximately 50% molasses by weight) carefully formulated in a special process that converts the molasses to a dry powder. It is used as a feed attractant and appetite stimulant for cattle, horses, sheep, goats, pigs and poultry.

While the benefit of the molasses in

this blend is well understood, the diatomite may be far more than just a carrier. Chicken sheep and cattle producers are currently evaluating Molodri as an internal parasite control.

The individual diatoms in diatomite are made up of silica skeletons that are razor sharp to insects. The diatoms cut their exoskeletons, absorbing oils and waxes from the insect cuticle thus facilitating moisture loss and death by dehydration.

Absorbacide, our finest grained product is registered with the APVMA as a pest control in stored grain. It works as a surface treatment and as a grain protectant. It is currently undergoing field trials with the Queensland DPI as a control of the Darkling beetle in chicken houses, having achieved successful laboratory trials.

As well as this, the senior medical entomologist at Westmead hospital in Sydney has completed very successful laboratory trials on Bed Bugs. Field trials are currently underway.

Mr Michael Sommerlad, a consultant to the organic poultry industry has recently completed a trial using absorbacide against Red Mite in chickens. The experiment was 100% successful.

Fine diatomite has been used in Lick blocks to provide dietary silica to animals. It is also used as a seed coating to enhance seed survival.

It has been blended with fungal and bacterial pathogens to increase insect mortality. Diatomite offers great promise as an all-purpose, natural, non-chemical insecticide for general house-hold use.



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