



www.natureswayresources.com

JOHN'S CORNER

ORGANIC FERTILIZERS AND NUTRIENTS 25:

MINERAL SAND Part-1

by John Ferguson

There are many types of mineral sands (sometimes called rock dusts) used in horticulture and gardening. Each offers different nutrients and benefits. Today I want to look at the mineral sands of igneous or volcanic origin. The most common in the Gulf Coast region is granite sand, basalt sand, and lava sand to a lesser degree. This week we will look at granite sand.

Granite Sand - This sand comes from the breakdown of granite. It can be produced naturally through weathering of the granite rock or from the crushing of granite ores for a gravel product. Granite is a granular rock that is light in color and composed primarily of minerals we call feldspar and quartz with small amounts of mica and hornblende. Large deposits of granite are mined in Texas just west of the Austin area. It is often pinkish and sometimes has a salt and pepper look from other mineral crystals embedded in it. Enchanted Rock state park near Llano, Texas, is a granite dome that many are familiar with.

The minerals (elements) in granite vary a little depending on the source. Some average values are:

72%	SiO ₂	Silicone dioxide (quartz mineral)
14%	Al ₂ O ₃	Aluminum oxide
4%	K ₂ O	Potassium oxide
3.7%	NaO	Sodium oxide
1.8%	CaO	Calcium oxide
1.7%	FeO	Iron oxide
1.2%	Fe ₂ O ₃	Iron oxide
0.7%	MgO	Magnesium oxide
0.3%	TiO ₂	Titanium oxide
0.12%	P ₂ O ₅	Phosphorous oxide
0.05%	MnO	Manganese oxide

101 Sherbrook Circle • Conroe, Texas 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe • Fax (936) 273-1655



www.natureswayresources.com

They are other elements in granite that vary that are in quantities of just a few parts per million or even parts per billion. I used common chemical names above rather than being exact (e.g. P_2O_5 is actually known as Diphosphorous Pentaoxide).

I am sure many of you recognize the plant nutrients in granite such as potassium, calcium, iron, magnesium, manganese, etc. As granite breaks down these nutrients are slowly released by microbes in the soil and by chemical and physical weathering.

We use granite sand in gardening for several reasons. The sand size particles can add structure to many soil types increasing aeration and infiltration of moisture. Also as the particle size becomes smaller there is an increase in surface area that allow more processes to act on it and release the nutrients quicker.

There is a third property of granite sands that is important to some, it is widely debated in agricultural and horticultural circles and is called Paramagnetism. All materials of volcanic origin have varying degrees of this property. From observational data all over the world and thousands of samples, it was found soils that are paramagnetic tend to be more fertile, have higher productivity and have less weed, insect and disease pressure than soils that are not paramagnetic. This will be discussed in future articles.

SUMMARY:

Granite sand is another tool in a gardeners tool box. It is often used as an ingredient in high quality soil blends to increase the soils health and value.

PROS:

- source of a few major nutrients
- small amounts of minor and trace elements
- releases nutrients very slowly
- aerates heavy tight clay soils
- helps light sandy soils hold moisture
- may slightly acidify soil as it decomposes
- improves soils structure for many soils

101 Sherbrook Circle • Conroe, Texas 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe • Fax (936) 273-1655



www.natureswayresources.com

- may be a source of Paramagnetism
- excellent availability
- available in different sizes from dust to fine gravel
- fine sizes are often added to vermi-compost bins to use as grit

CONS:

- very heavy in weight hence shipping charges are high
- releases nutrients very slowly
- may be dusty when dry.