

JOHN'S CORNER

Soil Amendments - Epsom Salt

By John Ferguson

If one searches the Web, they will find hundreds of claims about how Epsom Salt made their plants grow better. These range from curing blossom end rot on tomatoes (false- caused by a calcium deficiency) to helping seeds germinate (false - all seeds already have all they need to germinate).

Some of the reports on company websites that mine and sell Epsom Salt make so many claims the one might think it would cure the common cold. So what is Epsom Salt, does it work, and should we use it?

Epsom salt takes its name from a bitter saline spring near Epsom in Surrey, England where it was first discovered. Epsom salt is a naturally occurring mineral called epsomite which is an inorganic salt of magnesium and sulfur with a few water molecules mixed in for good measure. The chemical formula is typically $MgSO_4 \cdot 7(H_2O)$.

Magnesium is used by plants in making chlorophyll, it is used in helping fruit set on trees, and sulfur is used to make amino acids and proteins hence they are required nutrients.

Epsom salt will not do a thing for plants growing in fertile soil correctly balanced with all nutrients which includes magnesium and sulfur. All the studies have shown that it does not work unless there is a nutrient deficiency.

Applying Epsom salts to soils that do not need it can cause other minerals to be tied up and create other types of problems.

Always do a soil test (chemical analysis) before applying Epsom salt and only if it is needed. There are many good soil testing labs but our favorite is (explained in previous articles) is:

Texas Plant and Soil Lab (specializes in organic production techniques)



www.natureswayresources.com

5115 W. Monte Christo (956) 383-0739

Edinburg, TX 78539 <http://www.texasplantandsoillab.com>

It is often stated that yellowing between the veins could be a sign of magnesium deficiency and one should apply Epsom salt. However, yellowing can also be caused by bacterial and viral diseases as well as too much water. If the leaves turn yellow all over the plant it may be a sign of a sulfur deficiency. Note: Many nutrient deficiency problems look so alike the only way to know for sure is by testing.

In some cases the soil test may indicate plenty of nutrients but the plant is not responding, then there is another problem. This could be a nutrient tie-up due to the soil being out of balance or to a lack of correct microbes in the soil to help the plant absorb the nutrients. Over watering can also cause yellowing especially if municipal water is used which is full of chlorine and chloramines. Also soils that are heavily leached by rainfall or over watering may become deficient in these nutrients. A magnesium deficiency is more common in sandy soil or unavailable in highly acid soils. This is often seen in old weathered soils like we find in the Southeast states and in some areas along the Gulf coast.

If the soil test indicates the nutrients are present then some labs can test for nutrients in the foliage to confirm that the plant is not absorbing them.

Epsom salt has been used in horticulture and agriculture for decades to correct nutrient problems. The advantages to using Epsom salt to correct nutrient deficiencies of magnesium and sulfur is that it is highly soluble (fast acting), it is nearly neutral hence it does not change the pH (as compared to calcium minerals like limestone that contain magnesium), and it is inexpensive to use. It is considered an organic amendment since it is a natural mineral.

A typical application is 1/4 cup of Epsom salt per 500 square feet and water in. One can also use a foliar application as Epsom salts is highly soluble in water and is used by mixing 1 teaspoon of Epsom salts per gallon of water and spray on the leaves. Note: Too much Epsom salt can cause leaf scorch.

Epsom salts is just another tool in a gardeners toolbox to have a beautiful garden when used correctly but it is not a cure-all as some would have you believe.