PAY DIIRT
(Soil for Roses)

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In general, most plants grow by absorbing nutrients from the soil. Their ability to do this depends on the nature of the soil. Depending on its location, a soil contains some combination of sand, silt, clay, and organic matter. The makeup of a soil (soil texture) and its acidity (pH) determine the extent to which nutrients are available to the plants.

Excellent roses may be grown on any reasonably good soil. Soil that will grow vigorous shrubs and perennials is in condition to support rose bushes. The soil is not a dead, inert substance. It is alive and dynamic. The microbial population of the soil is concentrated mainly in the upper four or five inches where the bulk of organic matter is found.

An average soil sample is 45 percent minerals, 25 percent water, 25 percent air, and five percent organic matter. Different-sized mineral particles, such as sand, silt, and clay, give soil its texture. Fungi and bacteria help break down organic matter in the soil. Plant roots and lichens break up rocks which become part of new soil. Roots loosen the soil, allowing oxygen to penetrate. This benefits microbes living in the soil. Earthworms digest organic matter, recycle nutrients, and make the surface soil richer.

People describe soil types in all kinds of ways such as heavy, light, sandy, clay, loam, poor or good. Soil scientists describe soil types by how much sand, silt and clay are present. This is called texture. It is possible to change the texture by adding different things. Changing texture can help in providing the right conditions needed for plant growth.

**Soil Texture** (the amount of sand, silt, clay, and organic matter in the soil)

Soil texture affects how well nutrients and water are retained in the soil. Clays and organic soils hold nutrients and water much better than sandy soils. As water drains from sandy soils, it often carries nutrients along with it. This condition is called leaching. When nutrients leach deep into the soil, they are not available for plants to use.

An ideal soil contains equivalent portions of sand, silt, clay, and organic matter. Soils vary in their texture and nutrient content, which makes some soils more productive than others. Sometimes, the nutrients that plants need occur naturally in the soil. Other times, they must be added to the soil as lime or fertilizer.

**Soil pH** (a measure of the acidity or alkalinity of the soil) Soil pH is one of the most important soil properties that affect the availability of nutrients. Macronutrients tend to be less available in soils with low pH. Micronutrients tend to be less available in soils with high pH. Lime can be added to the soil to make it less sour (acid) and also supplies calcium and magnesium for plants to use. Lime also raises the pH to the desired range of 6.0 to 6.5. In this pH range, nutrients are more readily available to plants, and microbial populations in the soil increase. Microbes convert nitrogen and sulfur to forms that plants can use. Lime also enhances the physical properties of the soil that promote water and air movement. Use dolomitic lime which will add magnesium sulfate to further enhance the soil. Magnesium is part of the chlorophyll in all green plants and essential for photosynthesis. It also helps activate many plant enzymes needed for growth.
It is a good idea to have your soil tested each spring. The report will explain how much lime and fertilizer your soil needs.

The best time to provide the ideal environment for the rose roots is before planting. The truth of the matter is that roses require good drainage, good air exchange in the soil and available nutrients. Amend heavy clay soils with sand and organic matter. The organic matter can be compost, manure, leaf mold etc. The addition of gypsum will help to break up the clay mass and aid drainage and air exchange. Check the soil pH to determine if lime is needed. Many rose growers like to add peat moss to lighten the soil. Personally, I never add it as I feel it is an inert material. It does help to retain moisture (below the soil line) but does little to enrich the soil. Superphosphate is another helpful addition.

In my garden, a common planting mixture would be: 1/3 sand, 1/3 clay soil, 1/3 compost, a cup of gypsum and a handful of superphosphate. Mixed well, the mixture is put back in the hole until I am ready to plant.

Over the years, semiannual addition of organic matter to the soil in our rose garden solved many of the nutritional problems that can occur. Application of composted manures, backyard composts, and topdressing our soils with organic mulches are the answer to a number of soil quality oriented problems associated with rose cultivation by promoting a rich and healthy biological system in the soil. This miniature ecosystem can solve problems of mineral and nutrient deficiency while it also helps you to increase water penetration and the water holding capacity of your soil. This biological diversity will also assist you in fighting disease organisms from taking hold in your soil and affecting the health of your roses.

Beneficial microorganisms feed on the organic matter and also feed other larger organisms that eventually convert simple composts and mulches into plant food. These organisms live and proliferate in soils that are rich in organic matter.

In established rose beds there is no need to till this organic matter into the soil. Just layering it on top of the soil will suffice. The microorganisms will immediately begin to integrate the nutrient wealth of the organic matter into your soil. And soon every gardener's friend, the earthworm, will find this organic matter. Once the earthworms show up it is evidence that your soil has begun the process of transformation. Soon enough you will notice a change in the health of your roses.

You will also notice that it takes less water and fertilizer to maintain your roses in a happy and healthy manner. You will also notice that it takes far less work to keep your roses impressing you and your neighbors. The roses you will get will be stronger, bigger, and easier to grow because you will be feeding the soil and let the soil feed your roses. Just as nature intended.

PS: Roses grown in pots or tubs will have the same general cultural soil requirements with some adjustments. Here peat moss has its place as it will aid the retention of water in the pot. To the soil add peat moss, organic matter and a few quarts of charcoal broken up into small pieces. This will improve drainage and help keep the soil “sweet”. Add some superphosphate and mix well.