

SOIL

Dahlias prefer soil that is:

1. well aerated and uniform in texture
2. contains a good amount of humus
3. drains well but holds sufficient moisture to sustain the vigorous plant growth
4. has the acidity of 6.2 to 6.5 - a bit on the acidic side.
5. has balanced nutrients of nitrogen, phosphate, potassium, along with micro nutrients.

Three types of soil - clay / sand / silt

All soil is a combination of clay, sand, and silt but at different degrees. **Compost** adds both organic matter and nutrients to soil.

Clay soil is rich in nutrients and quite fertile but needs to be broken up. It can become waterlogged, cracks when it dries out. Use organic matter to break up the clay and allow nutrients to become available to plants. Never use sand for clay soil as it will turn your soil to cement.

Sandy soil is usually low in nutrients and doesn't hold water, so plants dry out easily. Use organic matter and compost to increase water retention and nutrients.

Silt soil is very light and easily compacted by walking or machinery. It can wash away easily and be eroded by wind. It has the most nutrients and holds the most water. This soil can be made more stable by adding organic matter.

The miracle of soil!

The theory is to feed the soil first. Healthy soil produces healthy plants. Soil is made up of minerals. Ground up rock to which other material is then added.

Soil - A symbiotic relationship

The most important factor in growing healthy dahlia plants and producing great flowers is the soil.

Soil is alive

A single tbs of healthy soil may contain a billion assorted microbes (small living things that include bacteria, fungi and algae); a mile or more of fungal filaments (serve as a bacteria highway); plus the various microfauna organisms (microscopic organisms) such as nematodes

(microscopic worms) and arthropods (invertebrate animals such as insects). The invertebrates, insects and worms work hand in hand with microbes, fungal filaments and plants.

Most plants in healthy soil convert 40% of their energy produced by photosynthesis into root exudates (soluble substances, including sugars and amino acids) that feed and stimulate the soil microbes.

These microbes process all the essential and trace elements required by the plant. In short, we have a **symbiotic ecosystem** providing messages, food, elements, and water to the plants. Everything is in a natural balance.

To obtain this balance the necessity of the correct soil ph for the plant to thrive is critical.

Chemical Fertilizers, Pesticides, and Tilling

All of these affect the soil negatively and therefore impact the balance of the plant, soil symbiotic relationship.

Plants become more susceptible to diseases, nutrient deficiencies, and environmental stress like temperature changes and water fluctuations.

Uncovered soil during the winter months

This opens the soil to environmental extremes. Rain washes away nutrients leaving the soil nutrient deficient. Use a cover mulch such as leaves to protect your soil during the winter. You can also use a cover crop to add additional nutrients to your soil during the winter. Examples are Annual and Winter Rye grass or Hairy Vetch which is a legume cover crop. Plant as soon as dahlias are dug to receive the most from your cover crop.

What we can do

- Become more conscious of all the life beneath our feet.
- Use only organic insect control.
- Work to enhance and support the soil ecosystem. Eg: when planting add a shovelful of compost to each hole to 'seed' the living organisms back into the soil.
- Use mulch such as rotted leaves to top dress after planting.
- If you need that boost of chemical fertilizers then also continue to provide the natural fertilizers, compost, and organic matter to feed the soil.

Victoria Dahlia Society <http://www.victoriadahliasociety.org/>

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Victoria Dahlia Society instagram

vdsmemberships@gmail.com