

## **Soil Amendments**

By Naperville Garden Club member Linda K.

A soil amendment is any material added to soil to improve its physical properties, such as water retention, permeability, water infiltration, drainage, aeration and structure. The goal in amending soil is to provide a better environment for roots, which will in turn produce healthier and more vigorous plants. To be effective, an amendment needs to be thoroughly mixed into the soil. If it is only buried, it will not only reduce its effectiveness, it could do more harm than good by interfering with water and air movement and root growth.

There are two general categories of soil amendments: organic and inorganic. Organic amendments come from something that is or was alive, such as sphagnum peat, wood chips, grass clippings, straw, compost, manure, sawdust and wood ash. Its purpose is to improve soil aeration, water infiltration and both water- and nutrient-holding capacity. Organic matter also is an important energy source for bacteria, fungi and earthworms that live in the soil.

Inorganic amendments are either mined or man-made materials, such as vermiculite, perlite, pea gravel and sand.

These are only examples of various amendments and are not all necessarily recommended for soil in the Chicago area. Wood ash, from a wood-burning fireplace or fire pit, is high in both pH and salt and is not recommended unless you need to raise the pH level for specific plants that are salt tolerant. Sand is not recommended for our clay soil because it can form a soil structure similar to concrete.

Sphagnum peat is an excellent soil amendment because it helps the soil retain more water. Sphagnum peat is generally acid (i.e., low pH) and can help when growing plants that require a more acidic soil, such as rhododendron and blue hydrangea. Mushroom compost is another excellent soil amendment that adds valuable nutrients to the soil. It is like a shot of vitamins for your plants!

Wood products, such as hardwood mulch and wood chips, can tie up nitrogen in the soil and may cause nitrogen deficiency in plants, especially annuals. Microorganisms in the soil use nitrogen to break down the wood instead of feeding the plants. When the wood has been broken down, the nitrogen is released and again becomes available to plants. If you plan to apply wood chips or sawdust, you may need to apply nitrogen fertilizer to avoid nitrogen deficiency.

### **Key points on soil amendments:**

- Soil amendments improve the physical properties of soils.
- Amendments are mixed into the soil. Mulches are placed on the soil surface.
- The best soil amendments increase permeability, drainage and aeration.

Amending soil is not the same thing as mulching, although many types of mulch also are used as amendments. Mulch is placed on the soil surface. Its purpose is to reduce evaporation and runoff, deter weed growth, and to be visually appealing. Mulches also regulate soil temperature, helping to warm soils in the spring and keep them cool in the summer. Mulches may be incorporated into the soil as amendments after they have decomposed to the point that they no longer serve their purpose.