

# Understanding soil important in home gardening

**By KENDACE BORRY LANCASTER** — The first of a series of three sessions on home vegetable gardening was held this week at the Lancaster Farm and Home Center. Under the direction of Arnold Lueck, Co. Extension horticulture agent, interested gardeners learned how to better their skills of growing vegetables. "Anyone can garden," Lueck stated. "All it takes is a small amount of land, a little work, a little knowledge, and some ambition."



Arnold Lueck

The session centered on "soil," which Lueck described as that thin layer of the outer crust of the earth on which plants will grow. All soil, he further explained, comes from weathered rock.

The first step to better vegetable gardening is understanding the soil, Lueck stated. Made of several layers, it consists of the soil surface, the top soil, the subsoil, and the parent material.

The top soil is the most interesting layer, Lueck believes. Also called the "plow layer", the usually-dark-in-color soil is alive with micro-organisms. In comparison, the subsoil is lighter in color, and is the storehouse of water.

The natural home of the plant is the soil. Plants can be divided basically into two parts, that below ground portion and the above the soil parts.

Below the ground, the roots serve many purposes. They anchor the plant and fill the function of absorbing the plant food, oxygen, and water that the plant needs to survive. They help to keep the soil pliable, and are used in the storage of food.

Those parts of the plant which are above the ground go through the entire growth and life cycle.

In gardening, the major role of the gardener is to encourage the plant. Plants entire purpose in their goal of growing is reproduction and pushing and aiding this action to hurry the plants is what gardening is all about.

That brought Lueck to the subject of plant nutrition which is the feeding of the garden plants. Lueck explained that if a good job of feeding is done, the gardening is "made".

Lime is important to gardening. The substance neutralizes soil acids, provides calcium, helps soil organisms work, and makes more plant foods available from the soil. Most vegetable plants like soil with a ph of 6.5 and up.

The problem occurs when the soil acidity makes the ph drop below this level. Everything that is done to a soil makes it more acidic, Lueck stated. He added that rainfall greatly drops the ph of soil, leeching out the calcium. A general formula for how much lime is needed is 50 lbs. per 1000 sq. ft. or two tons per acre. But to correctly determine all the needs of the gardening soil, Lueck recommended a soil

test be done. Soil testing kits are available from the Extension service for a fee of \$3.

The primary needs of the garden soil are supplied by three elements - nitrogen, phosphate, and potash.

Nitrogen is the growth element. It makes plants grow faster and yield bigger. It promotes leafy parts, giving a rich color to its foliage. The protein content of the harvested portions of the crop is boosted. Nitrogen also feeds the soil microorganisms that breakdown organic matter to improve tilth, release the plant food, and increase

water storage capacity of the soil.

Nitrogen is the most likely of all the soil nutrients to be lacking. It moves out of the soil easily in drainage water.

Phosphate serves many purposes also. It stimulates early root formation and growth. It promotes the production of flowers, followed by fruits and seeds. It hastens full maturity of the plant. Pod and fruit crops respond well to phosphorus. Most soils are naturally low in phosphorus. Phosphorus will stay put in the soil for it lacks mobility.

Potash makes plants stronger and stiffer, being

an essential of plant cell walls. It is involved in general plant metabolism and helps to translocate starches, sugars, and oils. It builds resistance to diseases and helps in Winter hardiness. Tuber and root crops require a high percentage of potash. Potash level in most soils is fair to good.

These three elements can be applied from either

organic or inorganic sources. Organic sources are more expensive as a rule. Manure, any plant residue, sawdust, are all examples of organic materials which can be used on the garden. Lueck stressed that gardeners should keep working to increase the organic material in their gardens.

Inorganic materials come (Turn to Page 125)

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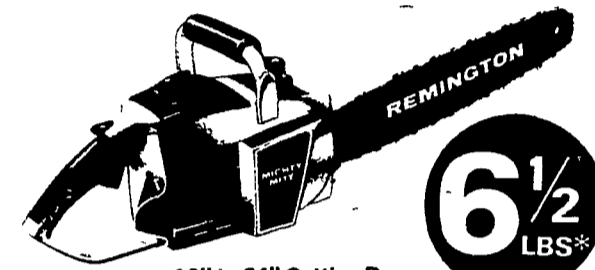


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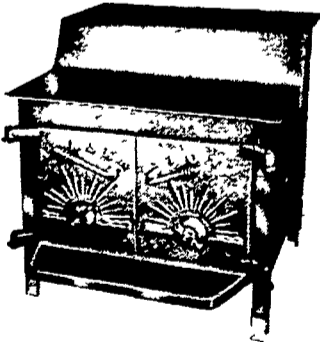
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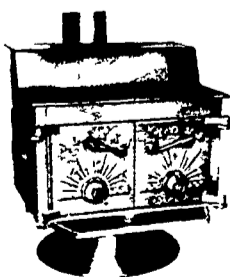
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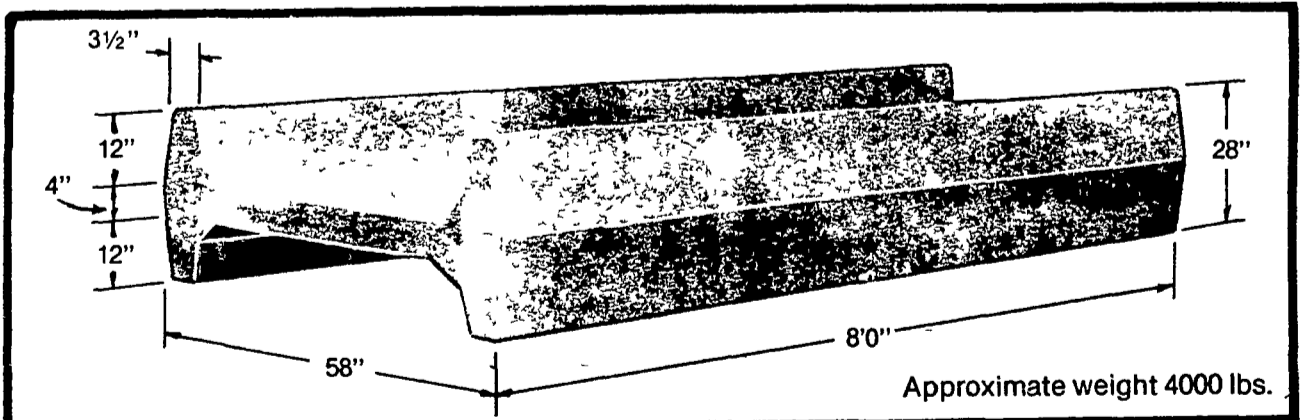
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