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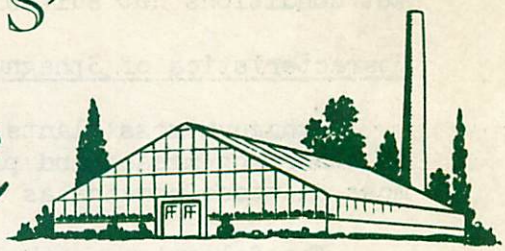

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DESCRIPTION AND USES OF PEAT MOSS

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Peat moss and pure Sphagnum moss have many uses in the florist industry as a seeding and growing media and as a packaging and shipping material. The advantages of peat in soil mixes to assure good physical properties are widely known to the grower. Recently, the use of organic materials for soil improving purposes has increased quite markedly and continued increases are anticipated.

Definition of peat moss

Peat moss is the poorly decomposed remains from stems and leaves of several species of Sphagnum mosses. Usually it is at least partly disintegrated (leaves off the stems).

Pure Sphagnum moss is the undecomposed live or freshly preserved remains of several species of Sphagnum mosses. It is not disintegrated.

Species of Sphagnum

There are two general types of Sphagnum mosses. They are as follows:

(1) Thin type. These contain many thin leaves on long, narrow stems. Sphagnum fuscum and S. cuspidatum are the principal species. These species are highly water absorbent.

(2) Thick type (robust). These contain thick leaves and stems and form a thick rosette at the terminal end of the stem. Sphagnum medium and S. magellanicum are examples. These species are also very absorbent but less so than the thin types.

Distribution of Sphagnum moss

Sphagnum mosses are found in the cool, humid climates of the world. Cool summers, low evaporation, high humidity and general moist conditions are conducive

to their growth. In North America the distribution coincides with the belt of northern coniferous forests. The mosses produce their own acidity and tolerate wet conditions not suitable for other bog plants.

Characteristics of Sphagnum moss

Sphagnum moss plants contain no true roots. They grow upon the dead remains of other bog mosses and plants and form hummocks, swales and colonies (clumps) of moss on these remains as they extend upward from the surface of the bog.

The following morphological features are common:

(1) Light tan or yellow-brown when squeezed dry.

(2) Porous fibrous or spongy fibrous texture.

(3) Quite elastic when dry.

(4) Light in weight.

(5) Leafy rosette forms on stems.

(6) Readily absorbs water.

(7) Contains transparent hyaline cells, which act as storage compartments when water is absorbed. This unique feature accounts for the large water-absorbing power of the moss.

Physical properties

Sphagnum moss has several important physical properties which distinguish it. These are as follows:

(1) Very low volume weight - 0.2 to .4 cc/gm.

(2) Very high water-holding capacity - 1000 to 3000 percent or absorbs 10 to 30 times its own weight in water.

(3) High content of organic matter - 95 to 99 percent pure organic matter.

(4) Well preserved plant remains only slightly decomposed. Original structure evident.

(5) Plant remains easily identified because of fresh condition of preservation.

Chemical properties

Chemical analyses of Sphagnum moss show some very unique properties as follows:

(1) Very acid reaction - pH of 3.0 to 4.5.

(2) Practically undecomposed - only very slightly soluble in organic solvents.

(3) Low nutrient content - nitrogen content moderate - 0.8 to 1.5% - phosphorus and potassium content only a trace.

(4) Carbon to nitrogen ratio very high.

(5) Cellulose content very high.

This means the Sphagnum moss will be easily decomposed by microorganisms when mixed with soil. The nitrogen, however, will not be readily available as the organisms tie it up in the decomposition process.

Uses of Peat moss

The advantages of peat moss as a soil improver are many. The moss acts in the following ways:

(1) Provides organic matter for fine-textured soils.

(2) Improves moisture-holding capacity of coarse soils.

(3) Adds bulk to soil mix, thereby increasing porosity and aerating soil.

(4) As a mulch it decreases the evaporation of moisture, lowers temperature of soil in summer, and protects against freezing in winter.

(5) Is excellent growing medium for plants in flats because of its physical nature.

The various horticultural uses for peat moss include the following:

(1) Medium for germinating seeds in flats.

(2) Rooting medium for softwood cuttings.

(3) Growth medium for acid-loving shrubs such as azaleas and rhododendrons.

(4) Medium for propagating orchids.

(5) An ingredient of soil mixes for potted plant.

(6) For mulches.

(7) A transplanting medium.

(8) For improving general physical condition of soils.

Among the advantages of moss peat over manure or other natural soil improvers are that it is free of weed seeds and diseases and has no offensive odor. It also is very light and easy to work with.

It has been generally assumed that the imported Sphagnum peat moss is superior in quality to the domestic product. This is not the case for several reasons: (1) The species are identical, (2) the methods of harvesting are the same, and (3) the deposits contain the same kind of extraneous plant material. In practice, however, the uniform quality of the imported peat is due to grading and not to a superior, raw material. The Minnesota deposits are identical in nature to the European and Canadian deposits but the producers have not provided a uniform product.

The commercial value of a peat moss depends upon its moisture content, its capacity to absorb water, and the amount of actual organic matter which it contains. Standardization of commercial peat products would be desirable for the peat moss industry in Minnesota and would result in a high-quality product which could be provided to florists and others in a uniform condition.