During the late 1960s about 20 percent of Florida's sawmills and most of the pulp mills utilized pine bark for fuel. The number increased through the 1970s as oil and related fuel prices soared. It is now difficult to find operations which generate large quantities of pine bark that do not utilize it for fuel.

Pine bark has been recognized as a suitable component for container growth media since the 1960s and in some cases it is a good single-component growth medium. Pine bark is preferred to hardwood bark because it resists decomposition and contains less leachable organic acids than some hardwoods. Research at the University of Georgia has shown that milled pine bark with 70 to 80 percent of the particles by volume within a range of 1/42 to 3/8-inch (0.6 to 9.5 mm) in diameter, with the remaining particles less than 1/42 inch (0.6 mm), is a good potting medium component. Although many early users of pine bark felt that aged pine was better than fresh bark, most potting media formulators today utilize fresh material and supply a small nitrogen charge, approximately 1/4 to 1 pound (113 to 454 g.) of nitrogen per cubic yard of bark, to offset the small surge in microorganism growth in fresh bark.

Since the pH of pine bark ranges between 4.0 and 5.0 and has a tendency to decrease over time in production systems with acidic or neutral irrigation water, incorporation of a liming material such as dolomitic limestone may be advisable. Approximately 5 to 9 pounds (2.3 to 4.0 kg) of dolomitic limestone will normally adjust a cubic yard of bark to pH 6.0 to 7.0 over a 60-day period. Hydrated lime may be substituted for a portion of the dolomite to raise the pH over a one-week period, while coarse limestone will extend the pH adjustment period.

A container medium of pine bark has noncapillary pore spaces between the large particles. Bark particles have a relative high cation exchange capacity, while most particles have internal water-holding capacity.

The large moisture content of fresh bark makes it heavy, a characteristic which limits its shipment over long distances. Once bark dries below 35 percent of its total water-holding capacity, it becomes difficult to rewet. Use of a horticultural wetting agent would be helpful for rewetting bark. A moisture adjustment period of several days is required.

Sphagnum moss. Sphagnum peat should be not be confused with sphagnum moss which is the whole moss plant collected alive along with connected dead, but non-decomposed moss parts. Dried sphagnum moss is not generally used in potting mixes but may be used as a top dressing of shredded moss parts over seeds in germination trays. The moss is reported to have some fungicidal activity.

Historically sphagnum moss has been used extensively for packing around roots of bare root plants and for shipping plants. Another popular application of sphagnum moss has been the lining of hanging basket frames. This procedure is still used to a limited extent, but the solid plastic sidewall containers have largely replaced hanging basket frames. When frames are used, a moistened layer of sphagnum moss about 1 to 2 inches thick is placed around the inside of the wire mesh or plastic mesh frame to contain the potting medium added inside the lining.

Sphagnum moss is a source of the fungus *Sporothrix schenckii*, which causes sporotrichosis. Sporotrichosis in humans usually starts as a local skin disease of the hands, arms and legs, but may become generalized. Workers handling sphagnum moss are encouraged to wear gloves to prevent injury to the skin surface and prevent entry of the organism through existing skin lesions.

Hardwood bark. Deciduous hardwood bark is used extensively in many areas of the country as a container media amendment. In Florida, hardwood tree species are grown primarily in the northern third of the state. Hardwood bark differs greatly from pine bark in its chemical and physical characteristics. The pH range of fresh hardwood bark is 5.0 to 5.5. As the bark ages in the presence of water, the pH increases to 8.0 or 9.0, a condition much too alkaline for plant production. Fresh hardwood bark should never be used immediately for potting plants.

Researchers at the University of Illinois developed an effective composting procedure for hardwood bark in the 1960s which effectively adjusts the pH and pasteurizes the bark, eliminating most soil-borne pathogens. Prior to composting, hardwood bark has two other features which render it unfit for plant production. Because hardwood bark decomposes more rapidly than pine, there is initially a high demand for nitrogen by microorganisms which will induce a nitrogen deficiency in plants growing in the fresh bark. The second potential problem relates to certain hardwood species which have been reported to have a phytotoxic effect on plants grown in fresh bark or plants drenched with extract from fresh bark.

Hardwood bark should be mechanically processed to small particles which will pass through a 1/2-inch (1.27 cm) mesh screen, with 10 percent of the particles larger than 1/8-inch diameter and 35 percent less than 1/32-inch (0.8 mm) diameter.