Plant Propagation for Horticulture Therapy Programs©

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Plants are living things and they encourage individuals to respond to them. For this reason, gardening has been used for healing throughout the ages. Even though the healing art of gardening has been recognized historically, it is still relatively new among therapeutic professions. This use of plants and gardening for therapeutic purposes defines modern day horticulture therapy.

Ever since horticulture therapy became recognized as a discipline, many groups have profited from horticultural therapy, including the elderly, mentally, physically, and developmentally disabled, substance abusers, socially disadvantaged, and public offenders. Programs utilizing horticulture therapy are taking place in senior centers, nursing homes, correctional facilities, hospitals, schools, greenhouses, and nurseries. Horticultural therapy can be adapted and applied to individuals of all ages and abilities.

A common element in horticulture therapy programs is plant propagation. Taking cuttings and planting seeds can develop or improve fine motor skills. Watering plants in a greenhouse, nursery, or garden center can improve gross motor skills. In a garden center, working with customers to sell plants can improve communication and social skills. Growing plants can bring fulfillment into the lives of an elderly individual or fill an individual with developmental disabilities with a sense of accomplishment. Just being around plants is therapeutic: it can alleviate aggression, alleviate depression, and provide a sense of peace. Plants can be propagated and then used for other purposes, such as propagating ivy from cuttings to use in topiaries or planting seeds and selling the grown plants at a fundraiser.

Teaching plant propagation skills to various groups of individuals can also serve as vocational training and lead to future jobs in the field of horticulture.

Tools make plant propagation easier. Therefore, if an individual is unable to use a tool, the task becomes difficult to accomplish. When selecting tools there are three main things to consider: weight, handle length, and type of grip. Many tools such as pruners, clippers, trowels, and watering cans, are available today that are lightweight and easy to maneuver. Tools are being made of lightweight metal alloys and polypropylene, which significantly reduce their weight. The second thing to consider is the length of the handle. Short-handled shovels and rakes are easier for individuals in wheelchairs and those who need to sit while gardening. Short-handled tools are also good for individuals with visual impairments because a shorter handle brings them closer to their work. Handle grips are the third thing to consider when choosing a tool. Many tools such as trowels and pruners are made with ergonomic grips that can reduce wrist strain. Rubber grips will make a tool easier to hold on to.

If tools are already available, they can be adapted to meet the needs of different individuals. Handles can be built up by wrapping styrofoam or rubber around the handle to make it easier to grasp. For individuals with weak fingers, find a cup with a large handle for digging. If reaching and bending is the problem try long-handled tools for pulling weeds. A strip of velcro or an elastic arm band can secure a tool handle to the forearm for better leverage. Adaptive tools do not have to be very sophisticated; they simply must assist the gardener in performing activities with ease.

Horticulture has been identified as a leisure activity of over 68 million households nationwide. Since so many people enjoy working with plants, horticulture therapy programs involving plant propagation offer a unique means to meet the special needs of targeted individuals. By determining the differing needs of an individual and using adaptive tools, plant propagation can become an instrumental part of horticulture therapy programs.

Propagating Selected Submerged Aquatic Species of the Chesapeake Bay©

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Submerged aquatic vegetation (SAV), is critical to maintaining coastal ecosystems around the world. It filters water by trapping sediments and nutrients, provides habitat and food for commercially important animal species, and reduces shoreline erosion by slowing wave energy. In areas such as the Chesapeake Bay, declining SAV populations have challenged restoration groups to use transplant sources that do not, or only minimally, disturb existing SAV beds. To support this effort, we investigated simple propagation methods for six SAV species native to the Chesapeake Bay. Our goals were to (1) determine ways to generate a source of transplants appropriate to a commercial nursery-type setting, (2) examine time and effort to produce transplant-ready material, and (3) create stock plants to supply propagules to local volunteer restoration groups.

We grew our SAV in 5130-liter (1350-gal) freshwater tanks in a greenhouse. The tank water was approximately 0.45 m (18 inches) deep and its temperature fluctuated with the surrounding air temperature between 20°C (68°F) during the winter and 25°C (77°F) during the summer. We circulated water within the tank through a two-sponge filter and used a hand skimmer to capture filamentous algae. Our system relied on natural light during the summer, supplemented with four 1000-watt sodium lamps suspended over each tank during fall, winter, and spring to provide a 14-h day length. From mid-April to October, whitewash over the greenhouse provided about 30% shade.

Initially, we tried various types of containers and growing mixtures, but then streamlined our operation to a very simple set-up that could be easily copied by volunteer groups. We used 5-cm (2-inch) wide × 10-cm (4-inch) deep square plastic pots filled with inexpensive topsoil (low organic matter) mixed with 1.2 g of a slow-release fertilizer (18N-6P-8K; 180-day release rate at 25°C). We covered this soil-fertilizer mix with a minimum of 6 mm (1/4 inch) of washed play sand to help reduce algae growth. For the purposes of our work, we considered plants started in this mix as "transplant-ready" when roots had spread throughout the pot and new shoots were visible. With some SAV species, it was difficult to get a firm rootball, because of the plants' delicate roots. We identified more than one way to propagate many of the species, but chose to report the method that we felt would be simplest for large-scale commercial propagation, or the most appropriate for volunteer groups consisting of horticultural novices (Table 1). Wild celery, redhead grass, and water stargrass were very easy to grow, and the fact that wild celery was easily