

Trimnings

The brochure published by the American Sod Producers Association introduced at its winter meeting in Clearwater Beach, Fla. is now available in quantities.

Entitled *The Dream Lawn Is Yours in Hours with Sod*, the short brochure is the first of a series being designed for the use of sod producers in promoting the use of sod. Ordering is done through the association at: Association Building, Ninth and Minnesota, Hastings, Neb. 68901.

Shooting seedlings into the ground from a helicopter may become the future method for planting trees.

The innovative technique, involving a seedling encased in an icicle-like projectile, is being studied by the U.S. Forest Service in Missoula and Portland, Wash. Donn Eddy, a Portland helicopter pilot, developed the process which he believes can reforest hard-to-plant areas, including steep, inaccessible areas. If it is determined the device would be an economical and practical way of planting seedlings, the agency's Missoula Equipment Development Center would perfect the technique.

General soil characteristics, especially soil depth, influence directly the potential rooting depth of planted trees and indirectly the amount of water and nutrients taken up by the trees to support the growth processes, according to Carl A. Budelsky, assistant professor in the Forestry Department at Southern Illinois University at Carbondale. He has completed a study on the relation of soil depth to tree survival and height growth.

He said a composite sample of 122 trees was selected randomly from those receiving shallow cultivation for five years to control herbaceous vegetation. The sample included sycamore, yellow poplar, sweetgum and white ash trees.

He said decreases in height growth may be expected if adequate

control is not maintained on the herbaceous vegetation that competes with trees for available soil water and nutrients where there is already a limiting rooting space.

"The past history of surface erosion, especially on land abandoned from agricultural uses, also can reduce effectively the rooting zone," he said. "Thus, careful evaluation of soil conditions present on lands to be planted to hardwood tree species is not only prudent, but is an indispensable prerequisite for satisfactory establishment and growth of trees."

Instead of spending \$500,000 on a revamped water treatment plant, Orange Grove, Miss. runs its raw sewage into a lagoon loaded with water hyacinths, according to a report from the Associated Press.

"We have been treating the wastes of about 1,500 persons with these water hyacinths and they are doing a tremendous job," said Clarence Johnson, president of Orange Grove Utility. Using water hyacinths which clog waterways throughout the South to clean polluted water is the idea of Bill Wolverson, a researcher at the National Space Technology Laboratory in St. Louis.

"They are ideal for sucking pollutants out of the water because they grow so fast and have a nice, big root system," he said. But there is a limit to how much each plant can absorb, so every couple of weeks some of the hyacinths are yanked out, dried and processed.

"Since those hyacinths are free of heavy metals, we have a program going with the Mississippi State University agricultural experiment program to turn them into animal feed," he said. "Water hyacinth meal would make a great protein supplement because the plant is about 20 percent protein, as compared to eight percent for corn and 11 percent for wheat."

The National Space Laboratory technology lab has also installed its own hyacinth-filled lagoon to remove the silver, other heavy metals and chemicals from its waste water. "Our tests prove the water coming out of our chemical waste

pond is lower in chemicals than the water coming out of our taps," Wolverson said.

His research shows 2.5 acres of hyacinths can remove:

- More than 500 pounds of phenol, a toxic chemical derived from coal tar, every three days.

- About 300 grams of cadmium or nickel, both of which can cause cancer, every day.

- The nitrogen and phosphate wastes of 800 to 1,000 persons each year.

At Orange Grove, about 115,000 gallons of the effluent flows daily into a three-acre lagoon to settle. Then it is slowly filtered through about an acre of water hyacinths. And after about two weeks it is clean enough to be returned to a local stream.

Major emphasis is being given to soil physical improvement, especially for golf greens, according to Dr. Jack Butler of Colorado State University, Fort Collins, Colo.

"At the various turf conferences that I have been to this season, this has been a big topic," Butler said. "As I recall, it was not more than 10 years ago that standard greens mixes and topdressings were something like equal parts of sand, soil and peat. Today sand is just about all that is being talked about and being considered for golf greens."

He said the primary concern is now that of sand quality. Organic matter is beginning to get much needed attention and the effects of various quality organic amendments on the physical quality of the soil is being investigated. He said one golf course builder will soon be using straw for organic matter in the sand for establishment of bentgrass.

"It seems that the extensive work done on golf green medias has given some much needed information," he said, "and now the time to research improvement techniques of large turf area soils is at hand. A question that needs to be answered is how can we significantly improve the heavy soils that handle so poorly on golf course fairways." His comments were reported in the newsletter of the Rocky Mountain Golf Course Superintendents Association.