SHORT CUTS

SAND, SAND EVERYWHERE... But not a drop to use. Most golf courses in Hawaii use manufactured sand because of a 1975 state law prohibiting use of natural coral sands from the beaches. The other alternative is to use volcanic cinder in greens. "Sands are not all the same," says Charles Murdoch, Ph.D., of the University of Hawaii.

SAME THING WITH TURF... Not only is sand scarce in the islands, but so is sod. Hawaii has only about 25 acres in sod production for the entire state. Many new turf varieties must be quarantined for up to two years before they can be brought from the mainland to the islands. Sugar cane is susceptible to the same viruses as turf, and it would take just one virus to wipe out the entire crop.

NEBULUS NEMATODES... It appears that the pest-fighting nematodes which infect Florida housecrickets is a different, previously unidentified species. Grover Smart, Ph.D., of the University of Florida's entomlogy department told the Florida Turfgrass Conference that research proving the nematode's identity will be released shortly.

CONGRATULATIONS... Gayle Jacklin, domestic marketing representative for Jacklin Seed, Post Falls, Idaho married Scott Ward on December 5. Ward is a management-trainee with lumber/paper company Boise Cascade. Gayle will use the last name Jacklin-Ward professionally.

BALANCING THE BUDGET... Marvin Gross, owner of Marvin's Gardens, Sarasota, Fla., has a favorite term when it comes to balancing the old budget. The word is "wobble-ate," and it means doing some fancy fudging of numbers when appropriate. From what was said at a panel session presented by the Associated Landscape Contractors of America, most landscape contractors are adept "wobble-ators."

A PERFECT FIT... Golf courses and homebuilding go hand-in-hand, as housing developments are proving across the land. According to the Urban Land Institute in Washington, D.C., a residential lot located on a golf course is worth up to 50 percent more than a "no golf" alternative.

recovery in high traffic areas.

Beard feels regular use of iron for rooting will be the norm down the road. While he says that iron exists in the soil, it is rarely in usable form. Thus applications in small amounts will benefit shoot and root growth, color and drought hardiness. He notes that visible results of iron are quick, often less than a half hour.

The trend farthest in the future, Beard believes, is fertilization based on tissue analysis. New technology, he says, will be able to analyze tissue for nutrient content and return results within two days. The cost will be high initially, though, he says.

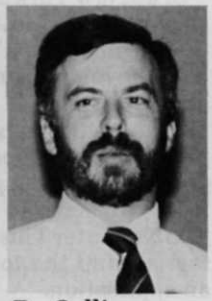
RESEARCH

Runoff control affects groundwater

The degree of runoff control has an impact on groundwater quality, says Thomas Watschke, Ph.D., Penn State University.

Watschke notes that the main collection points for runoff water are watersheds, which land development often takes away. Not only is the water not given a chance to percolate and filter through the watershed, it is often lost as a resource because it runs off into creeks and rivers and eventually out to sea.

Dr. Watschke



Dr. Sullivan

Michael Sullivan, Ph.D., University of Rhode Island, says that pesticides often gather along with other toxins. Both Watschke and Sullivan agree that periodic flushings, or alternate periods with and without rain, result in higher concentrations of toxins in runoff water because they are allowed to build up on surfaces like curbsides and roofs. When the built up material is flushed, the concentrations are thus higher.

Research performed by Watschke shows that established groundcover will go a long way toward reducing runoff and filtering out dirt particles holding toxins.

Ideally, sod presents the best solution, if affordable. It is immediate and most effective, able to handle the equivalent of six inches of rainfall per

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