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'Tropic Shore' Seashore Paspalum *Paspalum vaginatum* Sw.

Robert J. Joy and Peter P. Rotar

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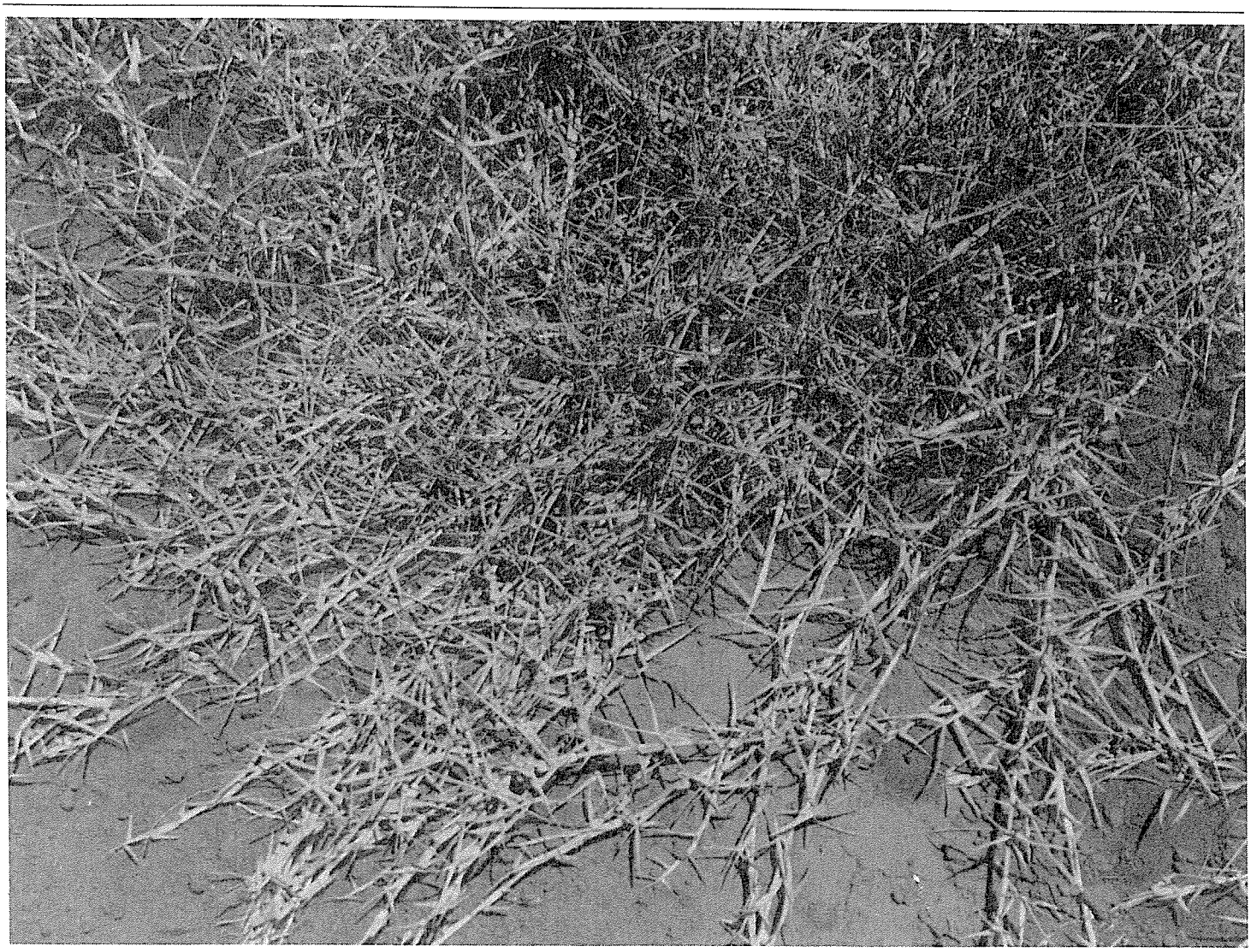

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Cover: Seashore paspalum growing at water's edge.

Photographs by USDA Soil Conservation Service, Honolulu, Hawaii 96850.

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INTRODUCTION

This paspalum cultivar is a cooperative release by the United States Department of Agriculture, Soil Conservation Service, and the University of Hawaii, Hawaii Institute of Tropical Agriculture and Human Resources, Department of Agronomy and Soil Science.

ORIGIN

'Tropic Shore' was collected along the seashore at the wave line of the Pacific Ocean in Kailua, Hawaii, on the Island of Oahu. *Paspalum vaginatum* (also known as seashore paspalum, saltgrass, siltgrass, and knotgrass) was first described as being native to the West Indies. The natural range of *Paspalum vaginatum* extends to both hemispheres, however, and it is found growing on the seacoasts from Australia to southern Spain and from Argentina and Chile to Baja California and North Carolina. Its distribution is pantropical and it is naturalized throughout the Pacific, where it is found growing in saltwater coastal marshes and coastal mud flats and sand flats (National Academy of Sciences, 1975).

DESCRIPTION

'Tropic Shore' is a perennial creeping grass that is stoloniferous and rhizomatous. It normally grows to a height of about 15 inches (38 cm), but under conditions of high fertility it will reach a height of 20 inches (50.8 cm). Its stems are abundant and prostrate. The stolons or runners root at the nodes to form a dense sodlike cover. Newly emerging leaves are folded in the leaf sheaths. The abundant, well-distributed mature leaves have stiffly ascending blades that are rolled toward the tips. The leaf blades are slender, gradually tapering to an acute point, and are approximately 3 to 8 inches (7.6 to 20.3 cm) long by 0.25 inch (6.4 mm) wide at the base. Inflorescences are sparse and develop within the foliage, below the tips of the ascending leaves. Inflorescences consist of two one-sided racemes 1.3 to 1.5 inches (3.3 to 3.8 cm) long that are together at first, spreading as they mature. Spikelets are 0.1 to 0.14 inch (2.5 to 3.5 mm) long. The flowering culms are usually semi-erect and about 10 to 15 inches (25.4 to 38.1 cm) high.

USE

'Tropic Shore' is intended primarily for stabilizing the shorelines and banks of aquaculture ponds, canals, and streams with brackish or salty water (Figs. 1, 2, 3, and 4). Once established, this grass provides good protection from strong waves. It has been less aggressive in growing out into the water than other grass species. This is important to aquaculture harvesting operations. It may be planted for pasture, lawns, and other uses where only salty or brackish water is available. It may be used for erosion control where the water is nonsaline.

ADAPTATION

'Tropic Shore' is adapted to low-elevation sites along the edges of canals, ponds, streams, and ocean beaches, where it grows at and slightly above and below the normal water level. In Hawaii it is best adapted to brackish coastline sites on soils ranging from sand to clay. It has grown well at pH values ranging from 6.7 to 8. Under saline conditions, little or no fertilization is needed. It responds favorably to fertilizer when grown with nonsaline or fresh water. *Paspalum vaginatum* is one of the most salt-tolerant grasses known and has been reported to grow with water containing total soluble salts of more than 10,000 mg per kg (10,000 ppm) (National Academy of Sciences, 1975).

METHODS OF ESTABLISHMENT

'Tropic Shore' is established vegetatively. Seeds are not available. Mature stolons, with or without roots, make good planting material for pond and stream banks. The best results are obtained by planting at or just below the normal water level. Planting is easily accomplished by pushing the stolons into the soil where it is soft and muddy. Stolons thrown onto very wet, boggy areas will generally grow, especially where they are covered with water. The drier the situation, the greater the care must be for a successful planting. Large dry-area plantings can be established by providing irrigation and planting in tractor-made furrows.

INSECTS AND DISEASES

No significant problems have been reported.

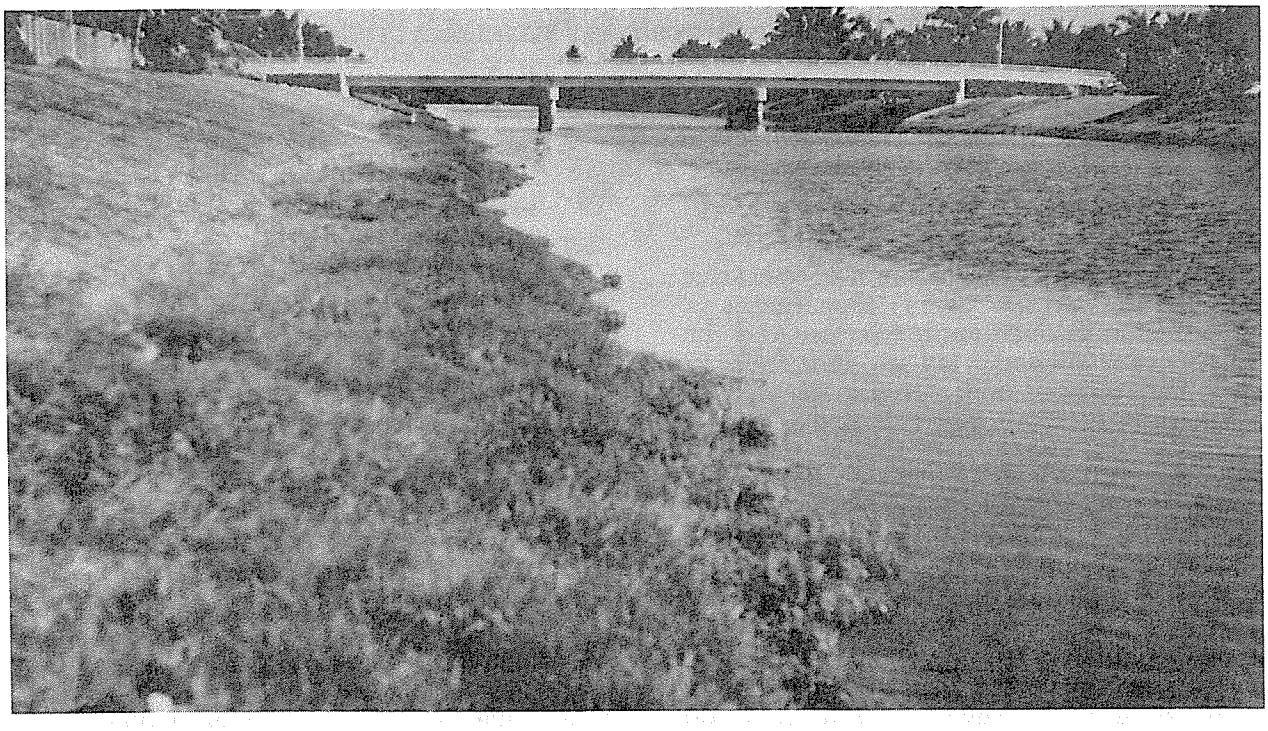

Figure 1. A natural stand of 'Tropic Shore' seashore paspalum providing bank protection on the Kawainui Canal, Oahu, Hawaii, near the site where the original material was collected.

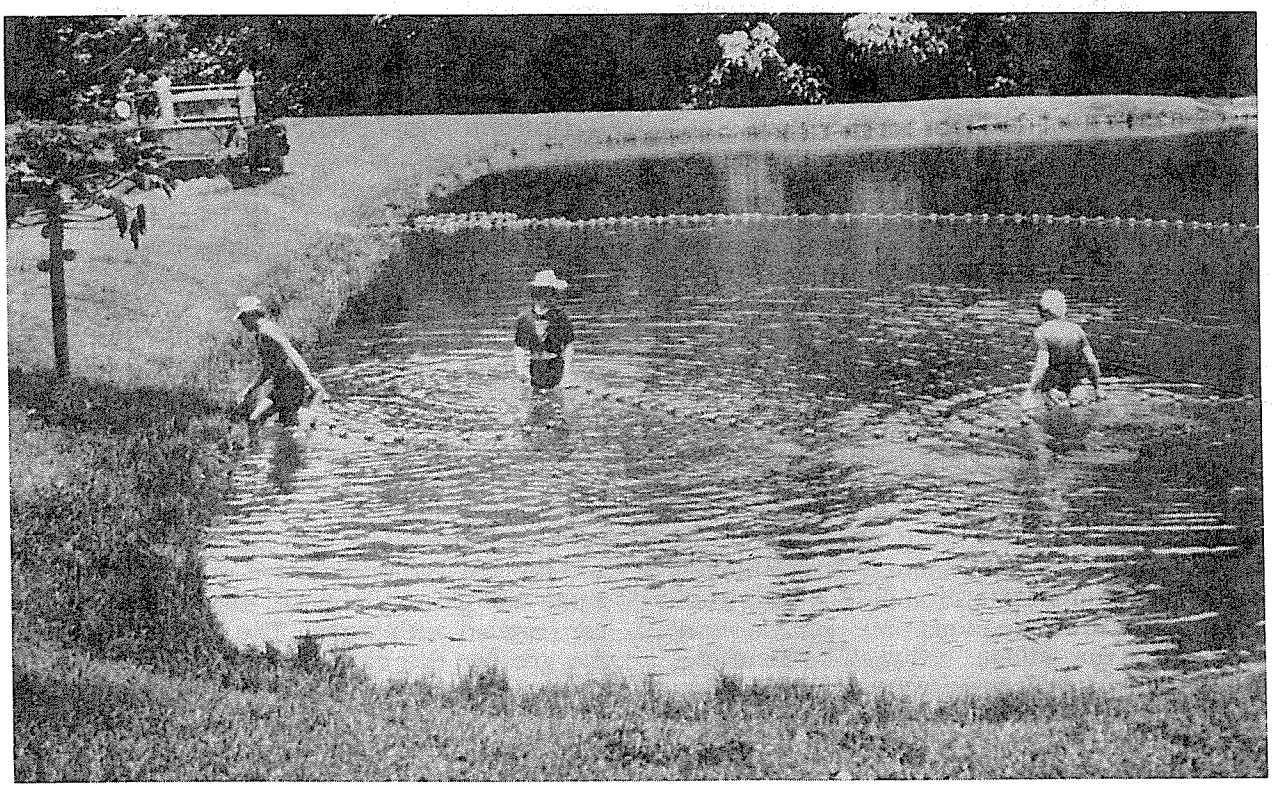

Figure 2. Harvesting the University of Hawaii marine shrimp aquaculture ponds. 'Tropic Shore' is growing at the water line and approximately 5 feet up on the bank. Bermudagrass is growing on the upper part of the berm.

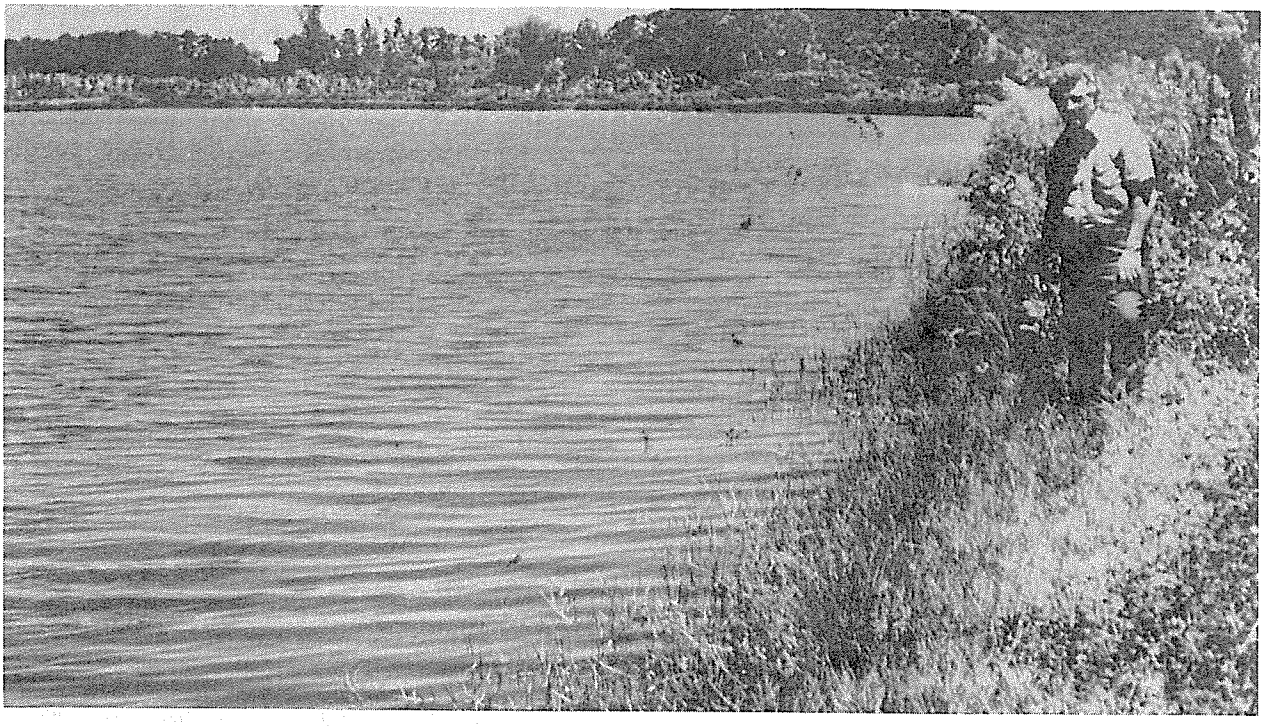

Figure 3. 'Tropic Shore' seashore paspalum growing at the water's edge and about 5 feet up on the aquaculture pond at Fish Farms Hawaii, Oahu.

Figure 4. 'Tropic Shore' stabilizing an aquaculture pond bank at the Maui County Agricultural Research Park, Kihei, Maui. Stolons were planted at or slightly below the water level. This planting is three months old.

MANAGEMENT

'Tropic Shore', being low growing, needs infrequent or no mowing. Very little maintenance is necessary once 'Tropic Shore' becomes established on stream or pond banks. Mowing or using approved herbicides[1] along bank edges to control weedy plants during establishment will promote the formation of a solid uniform stand.

In nonsaline areas, 'Tropic Shore' responds to nitrogen fertilizer. 'Tropic Shore' is usually not responsive to fertilizer under saline conditions. In shoreline stabilization, the only place fertilizer is warranted is where fresh water is used or where the grass is growing in areas of fresh-water seepage.

When using water with a very high salt content to irrigate 'Tropic Shore', one must be sure that ample water is applied and that good leaching is possible to prevent excessive salt accumulation. Careful application of such water is necessary to avoid damaging any relatively salt-sensitive plants that may be growing nearby.

'Tropic Shore' has been compared with 'Tropic Lalo' paspalum (*Paspalum hieronymii*), common kikuyugrass (*Pennisetum clandestinum*), and 'Pensacola' bahiagrass (*Paspalum notatum*). Kikuyugrass and 'Pensacola' bahiagrass are taller and have a more rapid vertical growth rate. Tropic Shore's lateral growth rate is nearly equal to that of kikuyugrass and is much greater than that of 'Pensacola' bahiagrass (unpublished data from SCS files).

AVAILABILITY OF PLANTING MATERIAL

Foundation-quality plant material of 'Tropic Shore' will be maintained by the Soil Conservation Service's Plant Materials Center, Hoolehua, Molokai, Hawaii. Vegetative material is available to commercial producers and others for establishing their production fields.

LITERATURE CITED

National Academy of Sciences. 1975. Underexploited tropical plants with promising economic value. National Academy of Sciences, Washington, D.C. Pp. 153–156.

[1]Use herbicides safely. Follow the manufacturer's instructions or contact Cooperative Extension Service personnel for more information.

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