Development of Minimal Input Best Management Practices for Paspalum

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Objectives:

1. To develop and refine best environmentally oriented paspalum management practices for long-term maintenance on golf courses.

Start Date: 1998
Project Duration: 5 years
Total Funding: $125,000

It is essential that as new cultivars of improved turfgrass species are released, cultural information is available that enables turfgrass managers to manage theses grasses. The University of Georgia is developing cultivars of Seashore paspalum. This projects focuses on managing Seashore paspalum. The encompassing objective is to develop and refine best environmentally oriented paspalum management practices for long-term maintenance on golf courses.

Overhead salt irrigation and water use studies are being used to develop water conservation management strategies for Seashore paspalum.

Of particular interest is the determination of ecotype tolerance to important stresses, including insects. In the humid southeast, insects of particular importance include both subterranean feeders and surface feeding insect pests.

In this project, seashore paspalum ecotypes are screened for potential resistance to a guild of insect pests that limit turfgrass growth, establishment, or appearance. Insect tolerance assessments are sometimes a critical component lacking in final management plans for new releases.

Turfgrass selections including 21 paspalums (*Paspalum vaginatum* Swartz) and 12 zoysiagrasses (*Zoysia spp.*) were compared with susceptible 'KY31' tall fescue (*Festuca arundinacea* Schreb.) and more resistant common bermudagrass (*Cynodon dactylon* Pers.) and common centipedegrass [*Eremochloa ophiuroides* (Munro.) Hack]) for potential resistance to fall armyworm [*Spodoptera frugiperda* (J.E. Smith)], an occasionally serious pest of managed turf.

Turfgrass and pasture grasses annually suffer sporadic damage by this pest, often severe in the Gulf Coast states. Resistant grasses offer an alternative management tool for the fall armyworm, reducing the need for pesticide use.

Hybrid seedlings from (Hyb 7 x Q36313) are being screened for fall armyworm resistance and early indications are that the level of resistance can be improved in this species. Breeder/foundation stock field problems with bermudagrass encroachment have not been resolved satisfactorily, since all the chemicals that have been trialed kill the bermudagrass, but significantly injure the paspalum also.

New herbicides Manor (metsulfuron) and Lontrel (clopyralid) are non-injurous to paspalum and can be safely used. Trimmit (paclobutrazol) and Proxy (ethophon) effectively suppress seedheads in paspalum, but Primo (trinexapac-ethyl) does not.

Nematode resistance evaluations are underway, including resistance to root knot nematodes which have some tolerance to saline conditions. Management protocols for paspalum with morning shade vs. afternoon shade are being developed with and without significant traffic. Low light intensity studies (with shade at 30%, 60%, and 90%) will help to fine-tune management strategies under these conditions.

Overhead salt irrigation studies and water use by paspalum will be used to develop water conservation management strategies for this grass.

Summary Points

- Herbicide and weed management programs developed.
- Paspalums with resistance to fall armyworm were identified.
- Six paspalums have been identified with resistance to white grubs.
- Nematode resistance evaluations are underway, including resistance to root knot nematodes.
- New herbicides Manor (metsulfuron) and Lontrel (clopyralid) are non-injurous to paspalum and can be safely used. Trimmit (paclobutrazol) and Proxy (ethophon) effectively suppress seed heads in paspalum, but Primo (trinexapac-ethyl) does not.
- Management protocols for paspalum with morning shade vs. afternoon shade are being developed.