

TURFGRASS SOD RESEARCH UPDATE

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Sod production has become a highly sophisticated technology due to the development of better equipment, pesticides, turfgrass varieties, and production and handling techniques. However, many problems continue to plague sod growers including various weed species, diseases and other factors that reduce the quality and marketability of sod. The purpose of this paper is to explore several of these major problems and to report results from recent research at the University of Illinois on the production and subsequent use of sod.

ANNUAL BLUEGRASS CONTROL DURING ESTABLISHMENT

Annual bluegrass is a serious weed problem on some sod production sites. It germinates rapidly and is extremely vigorous and competitive with Kentucky bluegrass during cool seasons. Since preemergence herbicides that are effective in preventing annual bluegrass development from seed cannot be used safely in conjunction with seeding Kentucky bluegrass, studies were undertaken to evaluate their use with vegetative plantings. Results showed that application of a new herbicide - oxadiazon (Rhodia's Ronstar) - immediately after planting plugs of A-20 Kentucky bluegrass effectively controlled annual bluegrass and other annual weeds while allowing fairly rapid development of turf. However, tests employing 48 Kentucky bluegrasses showed that some varieties were highly susceptible to injury from oxadiazon while others were quite tolerant of this herbicide (Table 1). Results from other field studies showed that close plug spacing (ca. 6 in), moderate mowing heights (1.5 - 3.0 in), and adequate fertilization (0.5 - 1.0 lb Nitrogen/1000 sq ft/month) were important factors for encouraging rapid turfgrass establishment from plugs.

YELLOW NUTSEDGE CONTROL

Yellow nutsedge (Cyperus esculentus L.) is a perennial sedge that reproduces by seed, rhizomes and tubers. One surviving tuber can give rise to several nutsedge plants which, in turn can spread rapidly through lateral growth and development of rhizomes. Extensive formation of tubers at rhizome terminals can ensure regeneration of nutsedge plants in subsequent years. Results from research at the University of Illinois have shown that the success of yellow nutsedge as a weed in some turfs is inversely related to the competition from Kentucky bluegrass. Important factors for restricting the spread of nutsedge included: adequate fertilization (0.5 to 1.0 lb N/1000 sq ft/month), moderate mowing heights (1.5 to 3.0 in), adequate moisture to sustain growth of Kentucky bluegrass during extended drought periods, and avoidance of summer disease in the turf. Chemical control of yellow nutsedge was highly variable; the best control from cyperquat and MAMA occurred on sites where intensive irrigation was practiced. This was believed to be due to the relationship between moisture and the absorption of the applied herbicides by the leaves. Plants sustained under high moisture have relatively thin cuticles with continuous channels of water through the pores of the cuticle. Herbicide movement is facilitated by the water continuum between the spray droplet and the inside of the leaf. In contrast, plants subject to drought typically have thicker cuticles with air-filled pores. Herbicide absorption is restricted in these plants and, consequently, efficacy is reduced.

Table 1. Relative phytotoxicity from oxadiazon to field-planted plugs of Kentucky bluegrass varieties.

Phytotoxicity	Variety
Low	A-20, A-34, Ba 62-55, Baron, Brunswick, EVB-282, EVB-307, Galaxy, Geronimo, Glade, K1-131, K1-132, K1-133, K1-143, Majestic, Plush, PSU-150, PSU-169, PSU-197, RAM #1, RAM #2, Sodco, Vantage, Victa, Windsor.
Moderate	Adelphi, Ba 61-91, Bonnieblue, EVB-391, Fylking, K1-138, K1-155, Kenblue, Cheri, Monopoly, Nugget, P-140, PSU-190, Sydspport, Touchdown.
High	Campina, EVB-305, K1-157, Merion, P-59, Parade, Park, Pennstar.