

2007 Research Extension Proposal to the Michigan Turfgrass Foundation
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Continuing Projects

Weed Garden: In 1998 a weed garden was established at the south end of the turf center property. This display has been very useful for learning the identification of broadleaf and grassy weeds of turf. Proper identification is the first step to control. Although very labor intensive, the garden has been very useful during training sessions with extension agents, and visits from lawncare operators. The garden is a major component of the Weed ID workshop held on the afternoon of field day and has served as a ready source of plant material for the Turfgrass Pest Management class and Turfgrass Short Course, which are taught each fall. The number of specimens was increased and the quality of specimens was also improved over the last several years. Due to the success of the weed garden, permanent plastic signs have been made to identify the plots year-round. Additionally, enough plant material has been generated to ensure that live plant samples will be used for the Turfgrass Weed ID and Management Workshop at the MTF Conference. This will be a tremendous addition to the workshop and has resulted in an increase in re-certification credits awarded to the class as well as 0.35 CEU's from the GCSAA.

Estimated Budget: \$1,600

Project Life: no end date

Best Management Practices for Weed Control: This project has been completed. Please see the attached peer-reviewed article that was generated from this project. This project primarily funded by the MTF.

T³ Weed Protocols: The T³ weed program started in 1997 has been very popular. A list of difficult-to-control weeds for Michigan has been developed. Through this research we have developed recommendations for several speedwells species, ground ivy, and clover. We have continued work with ground ivy and initiated studies on wild violet, quackgrass, and equisetum. The turfgrass fact sheet 'Ground Ivy Control' is a direct result of our T³ Weed research. A large study was conducted in 2003-05 to evaluate herbicide replacements for clopyralid, a common ingredient in many commercial herbicides. Primarily, this involved stand-alone and tankmix combination with fluroxypyr. This compound is also in the pyridine family and demonstrated very good white clover and dandelion control. This information will be very useful in developing future weed control recommendations with the residential removal of clopyralid. Further studies are planned to examine turfgrass tolerance for the common cool-season species.

Several weed areas were established in 2002 to accommodate future research needs. Forty pounds of crabgrass seed were slit-seeded into a 1.5-acre area at the south end of the turf center. Additionally, a dandelion, broadleaf plantain and white clover combination area was established after Field Day in August. Currently, most of the broadleaf weed control trials are conducted off-site. These new areas should facilitate our ability to present results at Field Days (this area has matured nicely and was used for Field Day in 2004 – 2006).

Studies completed for knotweed, wild violet, crabgrass, broadleaf plantain, germander and creeping speedwell.

Estimated Budget: \$4,900 (real total of \$23,200 offset by industry support)

Project Life: 2007-2008

Annual and Rough Bluegrass Management (*Poa annua*, *Poa trivialis*): Turfgrass management professionals, including golf course superintendents, sports field managers, sod producers, and lawncare operators, have spent years trying to eradicate annual bluegrass from their turf swards. Annual bluegrass (*Poa*) is one of the most invasive weeds in turfgrass stands. It is also one of the most difficult to control. Objections to *Poa* in turfgrass stands include its prolific seed production, apple green color, and the bare patches that can be left behind when the *Poa* is selectively removed by summer stress or disease pressure. In recent years, rough bluegrass (*Poa trivialis*) has become more prevalent on sod farms and fairways. Our research will focus primarily on postemergence removal and management practices to diminish the impact of these undesired grasses. We recently completed a six-year study evaluating timing of PGR applications in the spring for effective and safe annual bluegrass seedhead suppression.

Estimated Budget: \$7,500 (plus additional industry support of \$10,000)

Project Life: no end date

NEW PROJECTS

Title: Programs Approach for *Poa annua* Control

Cooperator: Ronald Calhoun, Michigan State University

Location: Hancock Turfgrass Research Center

Timeline: Fall 2006-Spring 2010

Objectives: Determine the effectiveness of various *Poa* control programs and program combinations for limiting *Poa annua* infestation in a newly established creeping bentgrass fairway. Identify most effective treatment programs for minimizing *Poa annua* populations over a three-year period after establishment.

Experimental Design: 2x2x2 Factorial RCB

Number of Replications: 3

Application Equipment: Backpack sprayer (8002VS flat fan)

Crop: Creeping Bentgrass (established fall 2006)

Mowing Height: 0.5" (Fairway)

Treatments:

Trt #	Factor A (preemergence)	Factor B (PGR)	Factor C (postemergence)	Notes
1	--	--	--	Untreated
2	Dimension ¹	--	--	0.375 lb ai/A
3	--	Trimmit ²	--	24 fl oz/A 21-d interval
4	--	--	Velocity ³	6 apps @ 10g 3.5-d interval
5	Dimension	Trimmit	--	
6	Dimension	--	Velocity	
7	--	Trimmit	Velocity	
8	Dimension	Trimmit	Velocity	

¹ Spring/Fall treatments of Dimension herbicide to be made when soil temperatures are between 60-70 degrees F at 1-2" depth. Spring timing will be made on or around April 20 (soil temp ~55°F). Fall timing will be made on or around August 20 (soil temp ~72°F).

² Summer Trimmit program will begin on May 15 and conclude on Sept 15.

³ Velocity treatment series will be applied between August 15 and August 30.

Estimated project life: 2007-2010

Estimated Budget: \$6,000 per year (\$3,000 per year pledged from Valent USA)

Title: On-Site Demonstration of HM9930 for Selective *Poa annua* Removal

Cooperator: Ronald Calhoun, Michigan State University

Location: Forest Akers, Kalamazoo Country Club, Lugnuts Stadium, HTRC

Timeline: Fall 2006 – 2007

Objectives: HM9930 is an experimental herbicide that has shown very promising results in preliminary trials at MSU for removing *Poa annua* from creeping bentgrass. The demonstration plots will help determine the effectiveness of HM9930 for removing existing populations of *Poa annua* in creeping bentgrass putting greens and in a KBG baseball infield. Plots will be established during the fall of 2006.

Estimated project life: 2007

Estimated Budget: \$2,400

TOTAL CONTINUING PROJECTS BUDGET REQUEST:	\$14,000
TOTAL IN-STATE TRAVEL AND SUPPORT REQUEST:	\$1,600
TOTAL NEW PROJECTS BUDGET REQUEST:	\$5,400
TOTAL REQUEST FOR 2007:	\$21,000.00