PROJECT DESCRIPTION NO. 5
WEED CONTROL IN DIRECT SEEDED ZOYSIA LAWN

New lawn establishment with warm season grasses has traditionally been accomplished with vegetative plant parts consisting of surface stems, stolen and roots. Vegetative propagation insures that the lawn is planted with a specific cultivar with known characteristics. In commercial plantings like golf courses and resorts, the lawn type is specified by landscape architects so that the color and texture of the lawn is consistent with the overall design of the landscape. Recently, however, new seeded cultivars have been developed that provide similar design and performance characteristics as vegetatively propagated cultivars.

Weed control in direct seeded lawns represent a significant challenge to landscape contractors. In general, lawns established with vegetative materials can be treated with both pre and postemergence herbicides in 10-14 days after planting. Direct seeded lawns need at least 24-30 days of growth before herbicides can be safely applied. Since zoysia is a slow to germinate and establish, early weed control is especially important. In this project, early weed control will be enhanced by a nurse crop of annual ryegrass. Since annual ryegrass can act like a weedy grass if allowed to grow too long, it will be managed with herbicides to allow zoysia to fill in after the nurse crop phase is over at 4 weeks after planting.

The treatment design in the project is complex and is intended to illustrate how nurse plants and selective herbicides can be used together to rapidly provide ground cover while allowing for the eventual establishment of the desired slow growing zoysia grass.

PROCEDURE:

The site for this experiment is a 15 X 36 foot area in front of the weed science field plots at the Magoon facility. The site will be raked to provide a smooth plant free planting surface. The area will be divided into 6 plots 6 ft wide and 15 feet long. One pound of Zenith zoysia grass seed will be even spread across the entire 15 x 36 foot area. In alternating (see planting map) 6 ft.X 15 ft. strips plant 20 grams of annual ryegrass grass, 3 20 grams units will be required. After the zoysia and ryegrass is seeded, a hydromulch cap will be applied.

At 4 weeks after planting herbicides will be applied to reduce the growth of annual ryegrass and provide preemergence herbicide to reduce subsequent weed growth. Students will record all phases of the project with a digital camera. Visual rating of % cover of seeded grasses will be recorded every week after planting. At 4 weeks after herbicide application, a 1 square foot area of each treatment (12) will be collected and divided into ryegrass, zoysia and weeds for dry weight accumulation.

Table 1, herbicide treatments used to manage annual ryegrass and introduce Ronstar, a Preemergence herbicide. These treatments will be applied 4 weeks after seeding both annual ryegrass and zoysia.

Treatment #	Herbicide	Amount per acre	ml for 3 liter of finished mix	Rate lb ai/a
1	MSMA + Ronstar WP	40 oz. + 4.0 lb	23.4 ml + 36 g	2.0 lb + 2.0 lb
2	Fusilade + Ronstar WP	4.0 oz + 4.0 lb	2.3 ml + 36 g	.06 lb + 2.0 lb
3	Revolver + Ronstar WP	17.4 oz + 4.0 lb	10.2 ml + 36 g	.03 lb + 2.0 lb

Figure 1, key for grass seeding

	Zoysia alone
	Zoysia and ryegrass grass

Figure 2, planting map for zoysia and zoysia + ryegrass grass seed.

6 ft.		6 ft.		6 ft.		6 ft.		6 ft.		6 ft.	

Figure 3, plot map for herbicide applications 4 weeks after planting.

	#1 MSMA + Ronstar WP			**#2** Fusilade + Ronstar WP				**#3** Revolver + Ronstar WP		
3 ft.	6 ft.		3 ft.	3 ft.	6 ft.		3 ft.	3 ft.	6 ft.		3 ft.
1	2	3	4	5	6	7	8	9	10	11	12

Treatment list after the application of postemergence herbicides to zoysia, ryegrass and weeds.

Table 2, treatment descriptions after herbicides applied 4 weeks after seeding annual ryegrass and zoysia. These treatment plots are 6 x 15 ft.

Trt #	Description after herbicide applications
1	Zoysia + ryegrass grass – no herbicides
2	Zoysia + ryegrass grass – MSMA + Ronstar WP
3	Zoysia alone – MSMA + Ronstar WP
4	Zoysia alone – no herbicide
5	Zoysia + ryegrass grass – no herbicides
6	Zoysia + ryegrass grass – Fusilade + Ronstar WP
7	Zoysia alone – Fusilade + Ronstar WP
8	Zoysia alone – no herbicide
9	Zoysia + ryegrass grass – no herbicides
10	Zoysia + ryegrass grass – Revolver + Ronstar WP
11	Zoysia alone – Revolver + Ronstar WP
12	Zoysia alone – no herbicide

PROCEDURES AND ACTIVITIES FOR SEEDED ZOYSIA #5

LAB #	DATE	DESCRIPTION OF ACTIVITIES
1	8/25	
2	9/01	
3	9/08	Seed zoysia and annual ryegrass grass, then apply hydromulch cap.
4	9/15	
5	9/22	Record % cover for plots with and without ryegrass
6	09/29	Record % cover for plots with and without ryegrass
7	10/06	Record % cover for plots with and without ryegrass Record digital images of plots with and with out ryegrass grass. Herbicide treatments will be applied to designated plots
8	10/13	Record images of grass response to spray applications
9	10/20	Record images of grass response to spray applications
10	10/27	
11	11/03	
12	11/10	
13	11/17	Take data to include counts of ryegrass grass, zoysia grass and weeds. Collect dry weights of grass and weeds in each treatment for 1 ft^2.
	11/24	
14	12/01	Record dry weight data and discuss results
15	12/08	Written reports due
16	12/13	