Integrated Biological and Chemical Control of Poa annua

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The purpose of this research is to investigate the control of annual bluegrass (*Poa annua*) using both biological and chemical control methods. This study uses the bacterium *Xanthomonas campestris*, which causes "bacterial wilt" on *P. annua*, together with chemical control agents (i.e. plant growth regulators and selective herbicides). Results thus far indicate the bacterium is effective in controlling *P. annua* but is enhanced with chemical agents. Future research will involve specific identification of this particular strain of X. campestris and to genetically engineer a more aggressive bacterium to increase its ability to cause disease.
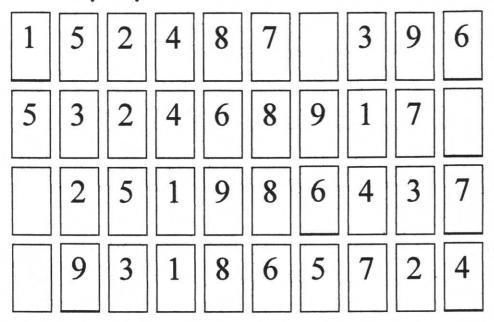
1998 Fairway Study

		7	4	2	5	3	6	1
		3	4	1	5	7	2	6
2	7	1	6	4		3	5
	1	2	6	5	7	3	4

Treatments

1. **Untreated control**

2. **Mycoshield** (tetracycline) control (10.2 g/ plot) applied every 14 days

3. *Xanthomonas campestris* (2×10^7 CFU's/ plot applied MWF)

4. **Mycoshield + primisulfuron** (5 g/A) at four applications at 14 day intervals

5. **Pro-Gibb** (4%) ((1 oz) 0.1oz/1000 sq. ft)applied every 14 days + *Xanthomonas campestris*

6. **primisulfuron** + *Xanthomonas campestris*

7. **Mycoshield + Pro-Gibb** (4%) ((1 oz) 0.1oz/1000 sq. ft)applied every 14 days

1999 Fairway Study

1	5	2	4	8	7		3	9	6
5	3	2	4	6	8	9	1	7	
	2	5	1	9	8	6	4	3	7
	9	3	1	8	6	5	7	2	4

Treatments

1. **Untreated control**

2. **Mycoshield** (tetracycline) control (10.2 g/ plot in 1.7 l of water drench) every 14 days

3. *Xanthomonas campestris*: at (2×10^7 CFU's/ plot in 1.5 l) applied every 7 days

4. **Mycoshield + Prograss mix** (at 1.5 oz/1000 sq. ft. + Urea at 0.1 lbs./1000 sq. ft. + Sprint 330 at 3.5 oz/1000 sq. ft.) applied every 21 days

5. **Prograss mix** + *Xanthomonas campestris*

6. **Pro-Gibb** (4%) (0.05 oz/1000 sq. ft) applied every 28 day + *Xanthomonas campestris*

7. **Mycoshield + Pro-Gibb** (4%) 0.05oz/1000 sq. ft

8. **Mycoshied + Primo** (at 0.25 oz/1000 sq. ft.) applied every 28 days

9. **Primo** + *Xanthomonas campestris*