

Molecular approaches for the study of leaf surface microorganisms in ornamental crops

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Molecular approaches for the study of leaf surface microorganisms in ornamental crops

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
212	Pathogens and Nematodes Affecting Plants				100%
	Total				100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	2.5
Actual	0.0	0.0	0.0	2.5

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	82397
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	33928
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	43034

V(D). Planned Program (Activity)

1. Brief description of the Activity

Development of a pathosystem between Pseudomonas and ornamental/nursery crops. Optimize the parameters important for the pathogenicity process. Characterize the diversity and community structure of leaf surface microorganisms in the natural environments under diseased and healthy conditions. Characterize the interactions between epiphytic populations of Pseudomonas. Make comparisons between epiphytic microbial populations in diseased and healthy plants. Make comparisons between epiphytic microbial populations on different hosts. Make comparisons between epiphytic microbial populations in plants grown under different conditions. Generate a list of microbial organisms which cohabit the phyllosphere with the Pseudomonas bacteria. Assess the possible use of any of these epiphytic organism as a biocontrol agent to be armed with anti-pathogen activities. Provide experiential learning to TSU students on agricultural biotechnology.

2. Brief description of the target audience

The immediate primary audience is the agricultural research community interested in understanding plant disease at the molecular level and using this understanding to design alternative disease management strategies. Regulatory agencies will also use the knowledge generated for policy formulation and growers will benefit from improved disease management strategies developed.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2008	0	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2008:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	1	
2008	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

Scientific publications relating to plant/leaf microbe interactions

Year	Target	Actual
2008	1	1

Output #2

Output Measure

Number of techniques to evaluate host/leaf surface microbe interactions

Year	Target	Actual
2008	1	2

Output #3

Output Measure

Number of pertinent bacterial strains identified

Year	Target	Actual
2008	2	10

V(G). State Defined Outcomes

O No.	Outcome Name
1	Number of host/Pseudomonas pathosystems elucidated
2	Number of potential biocontrol candidates identified
3	Number of crops with blocked epiphyte-pathogen switch identified

Outcome #1

1. Outcome Measures

Not reporting on this Outcome for this Annual Report

2. Associated Institution Types

3a. Outcome Type:

3b. Quantitative Outcome

Year	Quantitative Target	Actual
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3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
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V(H). Planned Program (External Factors)

External factors which affected outcomes

Natural Disasters (drought, weather extremes, etc.)

Appropriations changes

Public Policy changes

Government Regulations

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

During (during program)

Time series (multiple points before and after program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}