

Attachment 4 – Scope of Work for UC Santa Cruz; Trap cropping in Northern Monterey County strawberry production fields as a nonpoint water pollution prevention strategy

TASK #1: Devise, map, and mark farm treatments

Field visits of project research and laboratory assistants and Project Investigator will locate each plot and establish contact with individual growers and pest control advisors responsible for production and planting of trap crops. All plots will be planted and flagged and marked with appropriate signage indicating treatment to be applied.

DELIVERABLES:

1. A complete map of each site with marked sample plots.

TIMELINE:

December 1- December 30, 2005; 2006

EXPENSES:

How much has been budgeted for this task? \$20,810

What percentage (%) of the total tasks budget does this amount represent? 10%

TASK #2: Perform pesticide residue sampling and analysis of samples from experimental plots

Perform two water and sediment collections during runoff events in each year for pesticide residue analysis for each farm. Transport samples to laboratory. Conduct initial toxicity and OP ELISA tests. Send sub samples to AXYS. Receive, tabulate, and statistically compare residue data by farm. Prepare report on treatment differences.

DELIVERABLES:

1. Monitoring Plan, with description of water sampling design and statistics, MUST be completed before any water quality sampling begins
2. Quality Assurance/Quality Control Plan, as specified and approved by Regional Board Staff, MUST be completed before any water quality sampling begins

TIMELINE:

November 1 – March 1, 2005-2006; 2006-2007

EXPENSES:

How much has been budgeted for this task? \$19,968

What percentage (%) of the total tasks budget does this amount represent? 10%

TASK #3: Perform weekly sampling of experimental plots

Perform weekly insect sample on each plot. Transport samples to laboratory. Freeze samples and sort to determine lygus bug abundance. Estimate weekly strawberry damage. Generate percent damage estimates. Prepare weekly report to growers. Deliver report via FAX, e-mail, or mail drop. We will send each grower a weekly insect and damage estimate from the treatment plots, to use in conjunction with estimates and recommendations made by pest control advisors. Take monthly record of insecticide use information, including lygus bug control materials used and application rates, based on information given by on-site pest control advisors and grower cooperators.

DELIVERABLES:

1. A summary report with replicated, repeated measures data set suitable for statistical analysis of differences due to treatments.

TIMELINE:

May 1 –December 1, 2006; 2007

EXPENSES:

How much has been budgeted for this task? \$56,933

What percentage (%) of the total tasks budget does this amount represent? 29%

TASK #4: Analyze experimental results and prepare statistics for project report

Process, sort and count insects in field samples in the laboratory and test treatment differences in lygus and natural enemy abundance, damage and pesticide use using ANOVA tests on SPSS 11.5 software. Conduct a year-end interview with participating growers detailing their management practices, inputs, yields and operational costs, to substantiate pesticide use records with County Agricultural Commissioner. Analyze treatment differences in pesticide using ANOVA tests on SPSS 11.5 software.

DELIVERABLES

1. Summary report of data, results and statistical analysis.

TIMELINE:

December 1 – April 1, 2006-2007; 2007-2008

EXPENSES:

How much has been budgeted for this task? \$53,668

What percentage (%) of the total tasks budget does this amount represent? 27%

TASK #5: Prepare final project report and scientific data for extension and peer review.

Prepare and present final project report. Submitted scientific article to journal for peer review. Make two presentations of our results to water quality management planning extension meetings in Monterey County in 2006 and 2007.

DELIVERABLES:

1. Draft of a peer-reviewable technical paper which will be submitted to a scientific journal.
2. Copy of presentation of results

TIMELINE:

February 1 – December 1, 2006, 2007

EXPENSES:

How much has been budgeted for this task? \$48,143

What percentage (%) of the total tasks budget does this amount represent? 24%

Table 1. Task budget summary

Tasks Budget		
TASK #	FUNDS REQUESTED	FUNDS MATCH
Task 1	\$20,810	\$10,577
Task 2	\$19,968	0
Task 3	\$56,933	\$14,216
Task 4	\$53,668	\$ 9,477
Task 5	\$48,143	\$18,428

Table 2. Deliverables Schedule

Tasks	Description of Deliverables	Completion Dates
1.0	A complete map of each site and with marked sample plots	12/30/05 12/30/06
2.0	Monitoring Plan	1/30/06
	QAPP	1/30/06
3.0	Replicated, repeated measures data set suitable for statistical analysis of differences due to treatments	11/1/06 11/1/07
4.0	Summary report of data, results and statistical analysis	1/31/08
5.0	Draft of a peer-reviewable technical paper, which will be submitted to a scientific journal.	1/30/08
5.1	Copies of presentation	12/30/06 12/30/07

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