

GOVERNMENT OF SINDH
AGRICULTURE DEPARTMENT

(SOCIAL SECTORS)

AGRICULTURE RESEARCH



PC-I

ON

FRUIT FLY PROJECT

**DIRECTOR GENERAL
AGRICULTURE RESEARCH SINDH
TANDOJAM**

JULY 2008

**GOVERNMENT OF SINDH
PLANNING & DEVELOPMENT DEPARTMENT**

PC-1

**(SOCIAL SECTORS)
AGRICULTURE RESEARCH**

1. **Name of the Project:** **FRUIT FLY PROJECT**
2. **Location:**
 - **Indicate name of District/Province.** District Hyderabad, Mirpurkhas, Larkana, Badin Province Sindh.
3. **Authorities Responsibilities for:**
 - (i). **Sponsoring:** Secretary,
Agriculture Department,
Government of Sindh,
Karachi.
 - (ii). **Execution:** Director General,
Agriculture Research Sindh,
Tandojam.
 - (iii). **Operation & Maintenance:** Entomologist,
Agriculture Research Institute,
Tandojam.
 - (iv) **Federal Ministry:** Ministry of Food, Agriculture and Livestock
(MINFAL)
4. **(a) Plan Provision**
 - (i) **If the project is included in the medium term / five years plan specify actual allocation.** Not included.
 - (ii) **If not included in the current plan, what warrants its inclusion and how is it now proposed to be accommodated.**
 - (iii) **If the project is proposed to be financed out of block provision indicate.** Project is included ADP 2008-2009 with an allocation of Rs. 5.00 million.

Total block Provision	Amount committed	Amount proposed for this Project	Balance available
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(b) **Provision in current year PSDP / ADP** Rs: 5.00 Million

5. Project Objectives

- (i) The objectives of the Sector / Sub Sector as indicate in the medium term / five years plan be reproduced. Indicate objectives of the project and sectoral objectives.
- i. To minimize the use of pesticide in mango, guava, beer and melon crop.
 - ii. To meet out WTO requirements to maintain acceptable pesticide residues limits.
 - iii. Increase export of fruit and vegetable crops.

6. Description and justification of the project.

1. DESCRIPTION:

Fruit fly is active through out the year; its intensity is high on mango, guava, beer and melon in Sindh. Due to fruit fly attack quality of the fruit is damaged and the consumer rejects the infested fruits with the result farmers are not getting proper income.

Pesticides have gained popularity because these result immediate control of the pest and thus help in reducing the damage. Moreover insects also develop resistance against the pesticide used for a long time. Now a days there is general agreement that continue reliance on pesticide as a sole method of insect control have numerous disadvantages. This encouraged the Entomologist to tap the effective alternate means of pest control.

The project “*Research and demonstration of fruit fly management technology for fruit and vegetable crops in Sindh*” will be beneficial for growers to give technology for safe and effective management of fruit fly in Sindh and will increase the export of major fruit and vegetable crops.

This research activity is related to the Entomology line and efforts would be made to demonstrate fruit fly management technology in a manner that negligible fruit fly attack may occur on fruit crops. The field days and training / research aspects are different from post harvest technology project and these are based mostly on pre-harvest operations / management techniques / technologies to minimize fruit fly infestation and ultimately insecticide use in fruit crops and ensure good return.

- (i) Describe the project and indicate existing facilities in the area and justify the establishment of the project.

Staff

Scientists/Researcher and Supporting Staff is available. Consultancy and Fellowships are proposed.

Land

Experimental land at Tandojam is available. Experiments for development of fruit fly control technology will be conducted at Research Farms and farmers orchards in Hyderabad, Larkana, Mirpurkhas and Badin Districts.

Laboratory & Office Buildings

At Tandojam Laboratories building is available.

The Laboratory building will be hired rented in Larkana and Badin for establishment of Sub-Stations there.

Equipments

Fridge	2 Nos.	Available
Deep freezer	1 No.	Available
Air Conditioner	2 Nos.	Available
Camera	1 No.	Available
Sprayer (Manual)	5 Nos.	Available
Sprayer (Power)	2 Nos.	Available
Sprayer (Tractor Mounted)	1 No.	Available
Vehicle	2 Nos.	Available (needs repair)
Motorcycles	--	Proposed
Chemical	--	Proposed
Glassware	--	Proposed

- (ii) Provide technical parameters and discuss technology aspect of the project.

- Demonstration of sex pheromones for attraction of fruit fly on musk melon, beer, mango and guava.
- Fruit fly control through sanitation.
- Augmentation and releases of parasitoids.

- (iii) Provide details of civil works, equipment, machinery and other physical facilities required for the project.

Civil Work	Nil
Equipment	Nil
Motorcycle	Six

- (iv) Indicate Government issues of the sector relevant of the project and strategy to resolve them. Not applicable

7. Capital cost estimates

- (i) Indicate date of estimate of project cost. July 2008

- (ii) Basis of determining the capital cost be provided. It includes market survey, schedule rates. Estimation on the basis of previous work done etc. The expenditure has been worked out as per prevailing market rates and on the basis of the previous work done.

- (iii) Provide year-wise estimates of Physical activities by main components as per following.

1st Year

Technical

- A Consultant will be appointed as per TOR.
- Design survey for fruit fly.
- Selection for demonstration for sites for the fruit demo block.
- Training model for fruit fly managements.
- Experimentation on the fruit fly attractants.
- Pest status of Mango, Beer and Guava.
- Survey for fruit fly for natural enemies.

2nd Year

- Biology and lifecycle of fruit fly.
- Management techniques.
- Natural enemies of fruit flies.
- Preparation of technical reports.

3rd Year

- Identification of parasitoids fruit flies collected through surveys.
- To determine the natural enemies status of the fruit flies on different fruits (Beer, Mango, Guava and Musk Melon).

Fruit	Location	Area
Mango	Mirpurkhas	100 Acres
Ber & Guava	Tando Jam	100 Acres
Guava	Larkana	100 Acres
Musk Melon	Badin	100 Acres

- Preparation of regular Progress Reports & preparation of draft for the printing.

Recruitment of Staff

1st Year

- Proposed Research Fellow, Insect sampler and Contingent Paid Staff will be appointed. Purchase of Glassware and Chemicals will be done as per provision.
- Six Motorcycles will be purchased.
- Growers will be trained as per plan.

2nd Year

- Proposed Research Fellow, Insect Sampler and Contingent Staff will be appointed.
- Growers will be trained as per plan.
- Proposed Research Fellow, Insect Sampler and Contingent Staff will be appointed.
- Growers will be trained as per plan.

3rd Year

- Proposed Research Fellow, Insect Sampler and Contingent Staff will be appointed.
- Growers will be trained as per plan.
- Proposed Research Fellow, Insect Sampler and Contingent Staff will be appointed.
- Growers will be trained as per plan.

- (iv) Phasing of Capital cost be worked out on the basis of each item of work as stated above and provide information as per following.

Year wise detail of Financial requirement

(In Million Rs.)

Sr. No.	Item	Year-I			Year-II			Year-III			Total		
		Total	Local	FEC	Total	Local	FEC	Total	Local	FEC	Total	Local	FEC
A. Revenue													
1.	Consultancy (Fruit fly Expert)	1.440	1.440	-	1.440	1.440	-	1.440	1.440	-	4.320	4.320	-
2.	Contingencies												
	1.Honorarium P.I	0.030	0.030	-	0.030	0.030	-	0.030	0.030	-	0.090	0.090	-
	2.Honorarium Technical Staff 5	0.105	0.105	-	0.105	0.105	-	0.105	0.105	-	0.315	0.315	-
	3.Research Fellow (2, 4, 6)	0.240	0.240	-	0.480	0.480	-	0.720	0.720	-	1.440	1.440	-
	4.Skilled Labour (Insect Sampler)	0.520	0.520	-	0.520	0.520	-	0.520	0.520	-	1.560	1.560	-
	5.DPL	0.720	0.720	-	0.820	0.820	-	0.720	0.720	-	2.260	2.260	-
3.	Training of Growers	0.200	0.200	-	0.350	0.350	-	0.390	0.390	-	0.940	0.940	-
4.	Cost of Other Store	0.290	0.290	-	0.600	0.600	-	0.600	0.600	-	1.490	1.490	-
5.	Chemical & Glassware	0.150	0.150	-	0.500	0.500	-	0.509	0.509	-	1.159	1.159	-
6.	TA & DA	0.050	0.050	-	0.500	0.500	-	0.521	0.521	-	1.071	1.071	-
7.	P.O.L.	0.050	0.050	-	0.470	0.470	-	0.450	0.450	-	0.970	0.970	-
8.	Other Miscellaneous	0.170	0.170	-	0.500	0.500	-	0.550	0.550	-	1.220	1.220	-
9.	Advertisement & Publicity	0.045	0.045	-	0.050	0.050	-	0.080	0.080	-	0.175	0.175	-
10.	Furniture	0.050	0.050	-	0.085	0.085	-	0.000	0.000	-	0.135	0.135	-
11.	Fair, Exhibition, Seminar	0.000	0.000	-	0.600	0.600	-	0.625	0.625	-	1.225	1.225	-
12.	Electricity	0.140	0.140	-	0.290	0.290	-	0.200	0.200	-	0.630	0.630	-
13.	Transportation of Goods	0.030	0.030	-	0.180	0.180	-	0.100	0.100	-	0.310	0.310	-
14.	Office Rent	0.360	0.360	-	0.360	0.360	-	0.360	0.360	-	1.080	1.080	-
15.	Other Works	0.000	0.000	-	4.000	4.000	-	0.000	0.000	-	4.000	4.000	-
	Sub-Total A	4.590	4.590	-	11.880	11.880	-	7.920	7.920	-	24.390	24.390	-
B. 71-Capital													
1.	Motorcycle (Six)	0.360	0.360	-	0.000	0.000	-	0.000	0.000	-	0.360	0.360	-
	Sub-Total B	0.360	0.360	-	0.000	0.000	-	0.000	0.000	-	0.360	0.360	-
	Total A + B	4.950	4.950	-	11.880	11.880	-	7.920	7.920	-	24.750	24.750	-
	1% for 3 rd party monitoring cost	0.050	0.050	-	0.120	0.120	-	0.080	0.080	-	0.250	0.250	-
	Grand Total	5.000	5.000	-	12.000	12.000	-	8.000	8.000	-	25.000	25.000	-

8. Annual operating and Maintenance cost after Completion of the project.
 Item-wise annual operating cost based on proposed capacity utilization for 5 years)

Sr. No.	Item	Year wise expenditure requirement					
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	Total
1.	Contingencies						
	1.Honorarium P.I	0.030	0.030	0.030	0.030	0.030	0.150
	2.Honorarium Technical Staff 5	0.105	0.105	0.105	0.105	0.105	0.525
	3.Research Fellow (6)	0.720	0.720	0.720	0.720	0.720	3.600
	4.Skilled Labour (Insect Sampler)	0.520	0.520	0.520	0.520	0.520	2.600
	5.DPL	0.720	0.820	0.720	0.720	0.720	3.700
2.	Training of Growers	0.200	0.350	0.390	0.390	0.390	1.720
3.	Cost of Other Store	0.290	0.600	0.600	0.600	0.600	2.690
4.	Chemical & Glassware	0.150	0.500	0.509	0.509	0.509	2.177
5.	TA & DA	0.050	0.500	0.521	0.521	0.521	2.113
6.	P.O.L.	0.050	0.470	0.450	0.450	0.450	1.870
7.	Other Miscellaneous	0.170	0.500	0.550	0.550	0.550	2.320
8.	Advertisement & Publicity	0.045	0.050	0.080	0.080	0.080	0.335
9.	Fair, Exhibition, Seminar	0.000	0.600	0.625	0.625	0.625	2.475
10.	Electricity	0.140	0.290	0.200	0.200	0.200	1.036
11.	Transportation of Goods	0.030	0.180	0.100	0.100	0.100	0.510
12.	Office Rent	0.360	0.360	0.360	0.360	0.360	1.800
	Total:	3.580	6.595	6.480	6.480	6.480	29.615

9. Demand supply analysis	Not applicable
10. Financial plan	
Sources of financing	
(a) Equity:	
Sponsors own resources	
Federal Government	
Sponsors own resources	
Federal government	
Provincial government	Provincial Government. An amount of Rs:25.00 Million will be borne by Provincial Government.
DFIs/ banks	
General public	
Foreign equity (indicate partner agency) NGO's/beneficiaries	
Others	
(a) Debt	
(b) Grants along with sources	
(c) Weighted cost of capital	
 11. (a) Project benefits and analysis	
Financial:	The project result in additional income to the farmers due to reduction in pesticide use.
Social:	More earning due to export.
Environment:	The environment will be improved due to minimum use of pesticide by adopting IPM technology.

(b) Project analysis

Quantifiable output of the project: 2 Scientific Papers
6 Booklets in Sindhi, Urdu Languages
600-1000 Farmers will be trained

Unit cost analysis:

Employment generation (direct and indirect):	<u>Skilled</u>	<u>Un-skilled</u>
	180 Man months	720 Man months

Impact of delays on project cost and viability: Delay project activities as proposed in the target may increase cost of the project due to market inflation and delay the technology transfer to the growers and increase crop loss in yields.

(12) Implementation of the project

Indicate starting and completion date of the project	Starting:	July 2008
	Completion:	30 th June 2011

Item-wise/year-wise implementation schedule in the line chart co-related with the phasing of phasing of physical activities.

S.#	Item	1 st Year				2 nd Year				3 rd Year			
1.	Consultancy (Fruit fly Expert)												
2.	Technical Work												
	1.Fruit fly survey												
	2.Selection of demonstration sites for demo blocks.												
	3.Fruit fly attractants studies.												
	4.Training module.												
3.	Recruitment of staff												
4.	Training of Growers												
5.	Purchase of Lab Material												
6.	Fair, Exhibition and Seminars												
7.	Furniture												
8.	Purchase of Motorcycle												

13. Management structure and manpower requirements

- i) Administrative arrangements for implementation of the project.

Director General
Agriculture Research Sindh will be team leader and Entomologist, ARI.Tandojam will be the co-team Team leader for implementation of The project as Technical Experts.

- ii) Manpower requirements during execution and operation of the project be provide by skills/profession

Skilled

- 1. Consultant (Specialist in fruit fly Management)**
- 2. Research Fellow** Entomology Line
2+4+6= 6 @ Rs:10000/= P.M each
(Man month 144)

- 1. Insect Sampler** 06 = 216 man month
- 2. Labour** 5 at each location x 4
location = 20. @ Rs. 200/day.

Justification for Consultant:

The specialist / experts on the management of the fruit fly methods other than insecticides is not available with Agriculture Research Institute, Tandojam. This management technology of fruit fly management methods other than insecticide use is available with other organizations. Some organizations are already providing technical assistance to Govt: of Punjab on fruit fly management aspects. Thus an expert will be hired as a local consultant from internationally reputed organization based in Pakistan from open market by advertisement in news paper for Expression of Interest. The same will be selected / appointed by the departmental Selection Committee.

- iii) Job description, qualification, experience, age and salary of each job be provided.

To conduct surveys, analysis data, arrange farmers trainings, conduct Demos.

JOB DESCRIPTION:

1. CONSULTANT:

TOR for Consultants

- Technical assistance to the staff of fruit fly project.
- Practical demonstrations of fruit fly management technologies in Beer, Guava, Mango and Musk melon.
- Preparation of training manual for growers.
- Training of growers at Tandojam, Badin and Larkana.
- Impact assessment of fruit fly management technologies in Beer, Mango, Guava and Musk melon.
- Conservation and rearing techniques for natural enemies.
- Preparation of technical material.

2. RESEARCH FELLOW:

- Specialized aspects of predators and parasites rearing, augmentation and release, Research Fellows will be hired and trained they will work as
- To conduct survey
- Parasites rearing,
- Augmentation and release
- Analysis of data.
- Arrange farmers / growers trainings.
- Demonstration on growers field.
- Work under the guidance of Entomologist or Consultant.

3. Insect sampler:

- To collect the insect from the field.
- To assist the Research fellow in the field.
- To feed the insect in the Laboratory.
- To assist the research fellow and A.R.Os in the laboratory / Field work.

4. Labour:

- Work in the field on demonstration trails.
- Work in the field at experimental field at Tandojam.

QUALIFICATION

1. CONSULTANT:

Ph.D / M.Sc Entomology (Specialist in management of Fruit Fly)

2. RESEARCH FELLOW:

M.Sc (Agri) Hons. In Entomology/ Plant Protection line.

3. Insect sampler:

Matriculation

4. Labour:

Nil

EXPERIENCE

- | | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1. CONSULTANT: | More than 20 year experience as Research and Specialized in Entomology line, Specialist / Expert in Fruit fly Management. |
| 2. RESEARCH FELLOW: | Nil (only M.Sc specialized in Entomology/Plant Protection line. |
| 3. Insect sampler: | Nil |
| 4. Labour: | Nil |

AGE

- | | |
|----------------------------|--------------------|
| 1. CONSULTANT: | 40 years and above |
| 2. RESEARCH FELLOW: | 25 to 35 years. |
| 3. Insect sampler: | 18 to 25 years |
| 4. Labour: | More than 18 years |

SALARY

- | | |
|----------------------------|------------------|
| 1. CONSULTANT: | Rs. 120,000 / PM |
| 2. RESEARCH FELLOW: | Rs. 10,000/ PM. |
| 3. Insect sampler: | Rs. 240 / Day. |
| 4. Labour: | Rs. 200/Day. |

The Research Fellows will be stationed posted at Tandojam, Badin, and Larkana.

14. Additional project/decision required

Indicate additional projects/decision required to optimize the investment	Nil
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SUMMARY OF THE PROJECT COST

Certificate

- The name, designation and phone # of the officer responsible for preparing and checking be provided. It may also be confirmed that PC-I has been prepared as per instructions for the preparation of PC-I for social sector projects.
- The PC-I along with certificate must be signed by the Principal Accounting Officer to ensure its ownership.

Prepared by:

1	Fruit Fly Expert				
2	Contingencies				
3	Honorarium P.I	0.03			0.090
4	Honorarium				0.315
5	Technical Staff				
6	1 Research Fellow (2, 4, 5)	0.240		0.720	1.440
7	4 Skilled Labour (Insect Sampler)	0.520		0.520	1.560
8	3 DPL				2.280
9	Training of Growers				0.750
10	Cost of Other Store	0.290		0.600	1.490
11	Chemical & Glassware	0.150		0.500	1.150
12	TA & DA	0.050		0.521	1.071
13	P.O.L	0.050		0.450	0.970
14	Other Miscellaneous	0.170		0.550	1.220
15	Advertisement & Publicity				0.175
16	Furniture				0.135
17	Flag, Exhibition, Seminar	0.000		0.25	1.225
18	Electricity	0.130		0.260	0.430
19	Transportation of Goods	0.030		0.180	0.310
20	Office Rent	0.160		0.700	1.020
21	Other Works	0.000			4.000
Sub-Total A		1.570		5.590	24.290

(Signature)

(DR. ABDUL SATTAR)

ENTOMOLOGIST

AGRICULTURE RESEARCH INSTITUTE

TANDOJAM

022-2766249

Checked by:

22	8.71-Capital				
23	1. Motorcycle (Six)	0.380			0.380
Sub-Total B		0.380		0.380	0.380
Total A + B		1.950		5.970	24.670
1% for 3 rd party monitoring cost					0.247
Grand Total		1.950		6.217	24.917

(Signature)

(HIDAYAT ULLAH CHHAJRO)

DIRECTOR GENERAL

AGRICULTURE RESEARCH SINDH

TANDO JAM

022-2765505

/

DIRECTOR

PLANNING & MONITORING CELL

AGRICULTURE DEPARTMENT

GOVERNMENT OF SINDH

KARACHI

021-9211983

Approved by:

(Signature)

(ASLAM ALI)

ADDITIONAL SECRETARY (TECH)

AGRICULTURE DEPARTMENT

GOVERNMENT OF SINDH

KARACHI

021-9211543

(Signature)

(SABHAGOKHAN Jatoi)

SECRETARY

AGRICULTURE DEPARTMENT

GOVERNMENT OF SINDH

KARACHI

021-9211468

021-9211462.

Dated: _____

SUMMARY OF THE PROJECT COST

(In Million Rs.)

Sr. No.	Item	1 st Year	2 nd Year	3 rd Year	Total
A. Revenue					
1.	Consultancy (Fruit fly Expert)	1.440	1.440	1.440	4.320
2.	Contingencies				
	1.Honorarium P.I	0.030	0.030	0.030	0.090
	2.Honorarium Technical Staff 5	0.105	0.105	0.105	0.315
	3.Research Fellow (2, 4, 6)	0.240	0.480	0.720	1.440
	4.Skilled Labour (Insect Sampler)	0.520	0.520	0.520	1.560
	5.DPL	0.720	0.820	0.720	2.260
3.	Training of Growers	0.200	0.350	0.390	0.940
4.	Cost of Other Store	0.290	0.600	0.600	1.490
5.	Chemical & Glassware	0.150	0.500	0.509	1.159
6.	TA & DA	0.050	0.500	0.521	1.071
7.	P.O.L.	0.050	0.470	0.450	0.970
8.	Other Miscellaneous	0.170	0.500	0.550	1.220
9.	Advertisement & Publicity	0.045	0.050	0.080	0.175
10.	Furniture	0.050	0.085	0.000	0.135
11.	Fair, Exhibition, Seminar	0.000	0.600	0.625	1.225
12.	Electricity	0.140	0.290	0.200	0.630
13.	Transportation of Goods	0.030	0.180	0.100	0.310
14.	Office Rent	0.360	0.360	0.360	1.080
15.	Other Works	0.000	4.000	0.000	4.000
	Sub-Total A	4.590	11.880	7.920	24.390
B. 71-Capital					
1.	Motorcycle (Six)	0.360	0.000	0.000	0.360
	Sub-Total B	0.360	0.000	0.000	0.360
	Total A + B	4.950	11.880	7.920	24.750
	1% for 3 rd party monitoring cost	0.050	0.120	0.080	0.250
	Grand Total	5.000	12.000	8.000	25.000

JUSTIFICATION OF RECURRING CONTIGENCIES

S.#	Particulars	Justification
1.	Consultancy (Fruit fly Expert)	Services of Consultant will required to guide and provide technical suggestions for implementation of the project for 36 months @ the rate of 0.120 per month (Man month 36).
2.	Research Fellow	An amount of Rs:0.240 million in 1 st year is proposed to engage two Research Fellow @ the rate of Rs:10000/= P.M Rs:0.480 million is kept for 2 nd year to engage 4 Research Fellow @ Rs:10000/= P.M and Rs:0.700 for 3 rd year to engage 6 Research Fellow @ Rs:10000/= P.M (Man Months 144).
3.	DPL	An amount of Rs:0.720 is proposed in 1 st year to hire ten Labours @ Rs:200/= per day Rs:0.820 kept for 2 nd year of the project to engage 12 Labours and Rs:0.720 in 3 rd years to engage 10 Labours (Man Months 384).
4.	Skilled Labour (Insect Sampler)	An amount of Rs:0.520 is proposed in 1 st year to engage 6 Insect Sampler @ Rs:7400/= P.M. An amount of Rs:0.520 for 2 nd year and also for 3 rd year is kept to engage 6 Insect Sampler in 2 nd years and 6 in 3 rd year @ Rs:7200/= P.M (Man Months 216).
5.	Training of Growers	<p>An amount of Rs:0.200 in 1st year is proposed to provide 2 days training to the growers @ Tandojam. Two batches in year each consists of 100 growers will be facilitate. Rs:250/= is proposed to offer lunch and refreshment to one grower. Rs:0.350 is kept in 2nd year to train 600 growers viz 200 grower @ each location i.e. Tandojam, Badin & Larkana. Two batches in a year will be facilitated to provide two days training. Rs:0.390 is proposed in 3rd year to provide training to 300 growers for 3 locations i.e. 100 growers for Tandojam, Badin & Larkana. Two batches in a year will be arranged for two days training programme.</p> <p>The growers growing the specified fruits and are interested in fruit fly management methods other than pesticide will be invited for the training.</p>
6.	Chemical & Glassware	An amount of Rs:1.159 is proposed for 36 months to procure chemicals i.e. Lure, Protein hydrolysis, Euginal, Methyl, Malathion and various items of Glassware to use in Laboratory experiments and as well as field experiments on different orchards at farmers field in District Hyderabad, Larkana, Mirpurkhas and Badin.

S.#	Particulars	Justification																																																																														
7.	TA / DA	Total amount of Rs:1.071 is proposed for 3 years of the project to meet the expenses of traveling for P.I and five Research Fellow to cover 3 locations viz Badin, Larkana and Hyderabad. The purpose of traveling will be for conducting survey, field demonstrations, application of lures and dissemination technologies to the end year.																																																																														
8.	Motorcycle	Motorcycle will be used for Research Fellow, Insect Samplers for conducting demo plots, taking observations, insect collection, installation of baits and lures @ 3 locations viz Hyderabad, Larkana and Badin for four crops i.e. Mango, Beer, Guava and Musk melon.																																																																														
9.	P.O.L.	An amount of 0.970 is proposed for three years of the project to purchase Petrol/Diesel for Motorcycles, Generators, Spray machines to be used @ 3 locations viz Hyderabad, Badin and Larkana to cover 4 crops i.e. Mango, Guava, Beer and Musk melon.																																																																														
10.	Fair, Exhibition, Seminar	<p><u>i) Mela</u> Participation in favous Melas for dissemination of advance technology of food control to growers. An amount of Rs:600000/= has been proposed. The details of Melas are as under:</p> <table border="1"> <thead> <tr> <th>S.#</th> <th>Mela</th> <th>District</th> <th>For 2 Years</th> <th>Cost per Mela</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Bhit Shah</td> <td>Matiari</td> <td>Two</td> <td>60000</td> <td>120000</td> </tr> <tr> <td>2.</td> <td>Lal Shahbaz Qalander</td> <td>Jamshoro</td> <td>Two</td> <td>60000</td> <td>120000</td> </tr> <tr> <td>3.</td> <td>Shachal Sarmast</td> <td>Khairpur</td> <td>Two</td> <td>60000</td> <td>120000</td> </tr> <tr> <td>4.</td> <td>Murad Shah</td> <td>Hyderabad</td> <td>Two</td> <td>60000</td> <td>120000</td> </tr> <tr> <td>5.</td> <td>Shah Aqueq</td> <td>Thatta</td> <td>Two</td> <td>60000</td> <td>120000</td> </tr> <tr> <td colspan="3">Total:</td> <td>Ten</td> <td>60000</td> <td>600000</td> </tr> </tbody> </table> <p><u>ii) Seminars</u> An amount of Rs:625000/= has been proposed to arrange Seminar. The details of seminars are as under:</p> <table border="1"> <thead> <tr> <th>S.#</th> <th>Crop</th> <th>District</th> <th>No. of Seminar</th> <th>Cost per Seminar</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Guava</td> <td>Larkana</td> <td>Two</td> <td>78125</td> <td>156250</td> </tr> <tr> <td>2.</td> <td>Beer</td> <td>Hyderabad</td> <td>Two</td> <td>78125</td> <td>156250</td> </tr> <tr> <td>3.</td> <td>Mango</td> <td>Mirpurkhas</td> <td>Two</td> <td>78125</td> <td>156250</td> </tr> <tr> <td>4.</td> <td>Musk melon</td> <td>Badin</td> <td>Two</td> <td>78125</td> <td>156250</td> </tr> <tr> <td colspan="3">Total:</td> <td>Eight</td> <td>78125</td> <td>625000</td> </tr> </tbody> </table>	S.#	Mela	District	For 2 Years	Cost per Mela	Amount	1.	Bhit Shah	Matiari	Two	60000	120000	2.	Lal Shahbaz Qalander	Jamshoro	Two	60000	120000	3.	Shachal Sarmast	Khairpur	Two	60000	120000	4.	Murad Shah	Hyderabad	Two	60000	120000	5.	Shah Aqueq	Thatta	Two	60000	120000	Total:			Ten	60000	600000	S.#	Crop	District	No. of Seminar	Cost per Seminar	Amount	1.	Guava	Larkana	Two	78125	156250	2.	Beer	Hyderabad	Two	78125	156250	3.	Mango	Mirpurkhas	Two	78125	156250	4.	Musk melon	Badin	Two	78125	156250	Total:			Eight	78125	625000
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11.	Office Rent	<p>Two offices will be hired on rent, one at Larkana and one at Badin to conduct research experiments on related crop in the area. An amount of Rs:1.080 has been proposed, the details are as under:</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Rent P.M</th> <th>Period</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>i) Larkana</td> <td>Rs:15000/=</td> <td>36 months</td> <td>540000.00</td> </tr> <tr> <td>ii) Badin</td> <td>Rs:15000/=</td> <td>36 months</td> <td>540000.00</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total Rs:</td> <td>1080000.00</td> </tr> </tbody> </table> <p>As this research activity is sophisticated and require controlled conditions for mass rearing of parasitoids (predators & parasites). Therefore, well facilitated Labs will be required to meet out the research requirements. Moreover no any Building facility is available at Larkana and Badin for establishment of Sub Station. Looking to the importance of research activity on predators and parasites building will be hired.</p>	Location	Rent P.M	Period	Amount	i) Larkana	Rs:15000/=	36 months	540000.00	ii) Badin	Rs:15000/=	36 months	540000.00	Total Rs:			1080000.00
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12.	Other Works	<p>An amount of Rs:4.000 is proposed for Furnishing of 8 Laboratories at Tandojam in Entomology Section, Agriculture Research Institute, Tandojam. Amount of Rs:0.500 for each Laboratory.</p>																