



Report of the

**The Integrated Pest Management in Rice
Training of Trainers and Farmers' Field School**

**FTC, Dhanusa District, Nepal
June 27 – October 15, 1999**

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Annexation 1

List of Participants

IPM-TOT, FTC, Janakpur, Dhanusa District
(June 27 – October 15, 1999)

No.	Name	Address (Home)	Organizational Affiliation	Designation
1	Abdhesh Kumar Singh	Shadha V.D.C.-2, Mahottari.	DADO, Morang	AS C-Chief
2	Achyut Prasad Adhikari	Bharatpur _ 7, Chitwan (056-22215)	DADO, Dolakha	APPO
3	Basu Dev Sharma Pokharel	Raspurkot –4, Pyuthan (086-290948).	RPPL, Banke	APPO
4	Bishnu Bahadur Adhikari	Gaikhur –9, Gorkha.	DADO, Kanchanpur	APPO
5	Dev Saran Sah	Shreepur V.D.C.-3, Mahottari.	DADO, Kailali	APPO
6	Gobardhan Adhikari	Jamune –7, Tanahun.	DADO, Ilam	APPO
7	Govinda Prasad Barakoti	Purkot –7, Tanahun.	DADO, Tanahun	APPO
8	Gun Bahadur Thapa	Gardi –3, Madi, Chitwan.	DADO, Dhading	APPO
9	Hari Bahadur K.C.	Tarku –4, Lamjung (066-29311 / PCO).	DADO, Lamjung	APPO
10	Harihar Adhikari	Bharatpur _ 14, Chitwan (056-23394)	DADO, Makawanpur	APPO
11	Hem Raj Pokharel	Bijuwar –4, Phulwari, Pyuthan (086-29092).	DADO, Bardiya	APPO
12	Hom Raj Bista	Chity V.D.C.-8, Lamjung (066-29333).	DADO, Chitwan	SS Chief
13	Indra Rai	Kathmandu, (01-422385),	WE-Nepal, Kathmandu	Program Officer
14	Kishor Kumar Bhattarai	Dumarbana –6, Bara.	DADO, Lalitpur	APPO
15	Laxmi Prasad Kharel	Juropani –8, Jhapa (01-495346)	PPD, Lalitpur	APPO
16	Lekh Nath Kafle	Semlar –9, Rupandehi (071- 41533).	DADO, Ramechhap	APPO
17	Mahesh Regmi	Bharatpur –11, Chitwan. (056-22906).	DADO, Bara	ACDO
18	Mahesh Chandra Acharya	Ratnanagar –1, Chitwan (056-60269).	DADO, Salyan	APPO
19	Narayan Kumar Shrestha	Pithuwa –2, Chitwan.	RPPL, Kailali	APPO
20	Navin Kumar Karki	Harion –9, Sarlahi.(01-474212/01-415418)	RRN, Kathmandu, Nepal	Agri. Officer
21	Nirmala Basnet	N.B.S., Biratnagar (021-26721).	WE-Nepal, Morang	Prog. Officer
22	Purushottam Jha	Mahottari –3, Mahottari.	NARC / Nepalganj	Tech. Officer
23	Purushottam Lal Hada	Bhaktapur –13.	DADO, Nuwakot	APPO
24	Rajendra Kumar Malla	Chhang –3, Tharpu, Tanahun (065-29322)	DADO, Syanja	APPO
25	Ramesh Chandra Suvedi	Bharatpur –12, Chitwan (056-23809).	DADO, Parvat	APPO
26	Ravindra D. Patel	Palhi –1, Nawalparasi.	World Ed., KTM.	Prog. Officer
27	Sabitra Dhakal	Shreenathkot V.D.C.-4, Gorkha.	CARE, Nepal / Bardiya	Dev. Asst.
28	Shankar Prasad Neupane	Chandreswor –9, Lamjung (066-29422).	DADO, Gulmi	APPO

Annexation 1

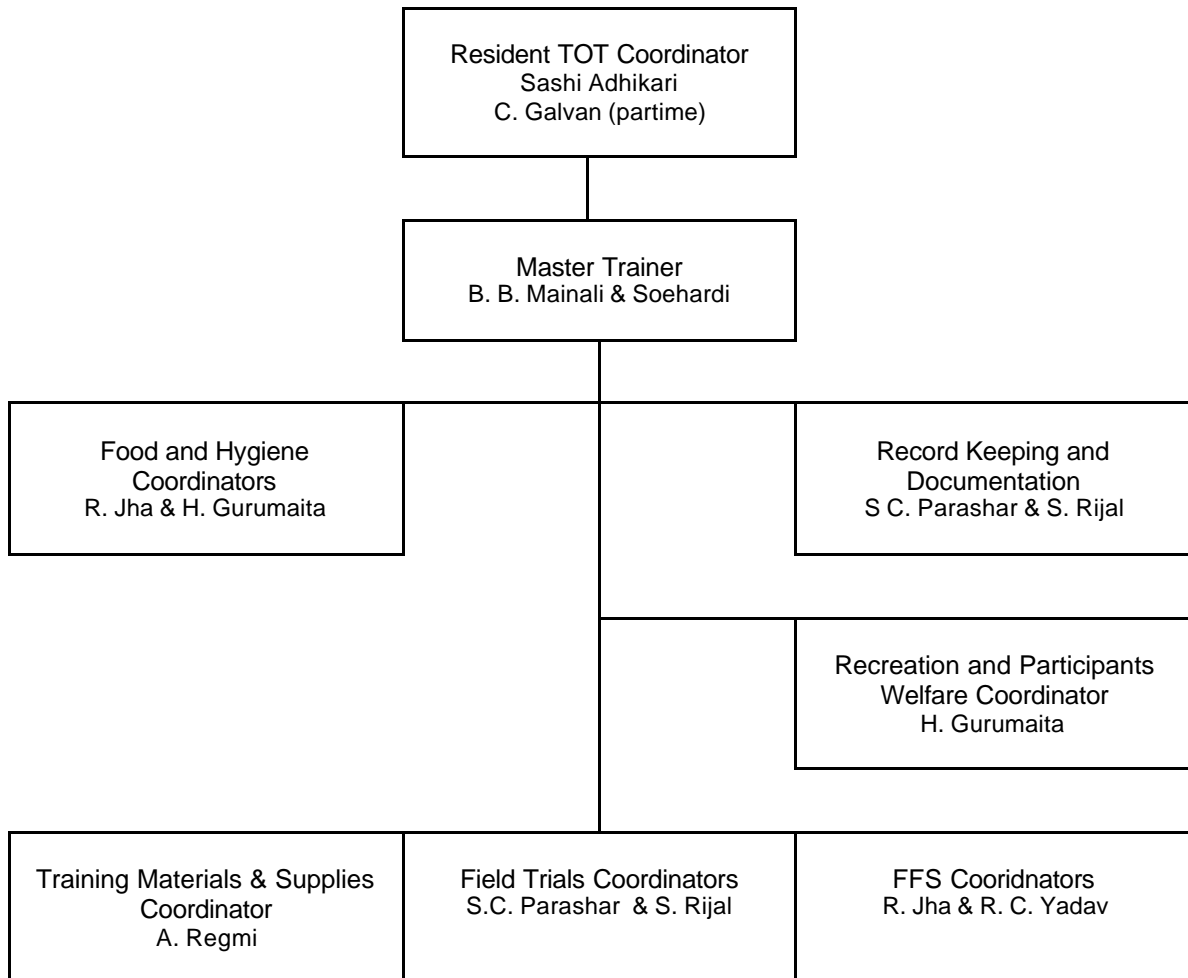
29	Shrikanta Adhikari	Bharatpur –12, Chitawan (056-21539).	CARE, Nepal / Syanja	Agro Forester
30	Shyam sundar Lal Karna	Basaiha –3,Dhanusa (041-21490 - PCO).	DADO, Sindhuli	APPO
31	Shyam Sundar Singh	Janakpur –10 (041-20439).	PQ Checkpost, Mahottari	APQO
32	Sita Ram Luitel	Gaikhur –9, Gorkha.	World Ed., KTM.	Prog. Officer
33	Surendra Prasad Paudel	Mahadevsthan –2, Kavre (011-61519).	World Ed. , KTM.	Prog. Officer
34	Thaman Bdr. Karki	Chidipani –6, Palpa. (075-20905).	DADO, Rupandehi	APPO
35	Yam Prasad Paudel	Jagatpur –1, Chitawan.	DADO, Rautahat	APPO

Annexation 2

Organizational Structure in the TOT

IPM TOT in Rice

FTC, Dhanusha District, Janakpur, Nepal
27 June – 19 October 1999



Annexation 3

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District, Nepal

27 June – 19 October 1999

Basic field studies in the TOT and FFS

Rationale:

Field studies are integral part of the IPM Training of Trainers (TOT) and Farmers' Field Schools (FFS). These are designed to respond to pressing problems of farmers in their localities. They form the basis for developing farmers' management capabilities and on greater scale, they also served as basis of recommendation for rice culture using IPM methods.

The field studies follows the four basic IPM principles, these includes: Growing a healthy crop; understanding the agro-ecosystem and observation of natural enemies; regular or weekly field observation; and farmers becoming experts in their own fields. In essence, these studies helped IPM trainees to understand the meaning and origin of these principles and help understand what now must do to implement these principles.

List of Basic Field Studies to be conducted in the TOT and FFS

1. Growing a healthy crop:
 - Yield and pest response to different nitrogen dosage.
 - Varietal monitoring and testing
 - Weeding
2. Understanding the agro-ecosystem and conserving natural enemies:
 - Insect Zoo (Predation Study)
 - Population density of aquatic insects

The international trainers suggested the above mentioned field studies
3. Regular or weekly field observation:
 - Simulation of Defoliation (Leaf Cutting)
 - Stemborer Damage Simulation (Tiller Cutting)
4. Farmers becoming experts in their own fields:
 - Comparative Study of Farmers Practice and IPM Methods

Annexation 3

Growing a Healthy Crop I: Yield and Pest Response to Nitrogen Dosage

Introduction:

Yields of most rice varieties easily increase with increasing nitrogen usage. There are also negative effects of nitrogen also including lodging, and water pollution. It is commonly stated that increasing nitrogen increases pests and diseases. In fact, some diseases such as blast and sheath blight do increase with more nitrogen, especially if the variety is not resistant. In the case of insect pests, increasing nitrogen does not automatically increase insect pests because natural enemies in the field can keep most pest population to a low level. High nitrogen can sometimes help the plant recover from damage caused early in the season by stemborer and defoliators. In this study, you will implement a common nitrogen response study for observation on pests and yield effects.

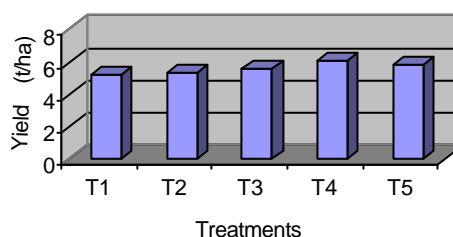
Methodology:

1. Use agronomic practices recommended for your area for all inputs but nitrogen.
2. There are 4 treatments. Each treatment has 4 replications.
 - T1. 60 kilogram of nitrogen per hectare + 30:30 of P & K respectively
 - T2. 80 kilogram of nitrogen per hectare + 30:30 of P & K respectively
 - T3. 100 kilogram of nitrogen per hectare + 30:30 of P & K respectively
 - T4. 120 kilogram of nitrogen per hectare + 30:30 of P & K respectively
 - T5. Farmers Practice 40 kilogram of nitrogen per hectare + 30:30 of P & K respectively
3. Timing of fertilizer application:
 - 50% of total amount as basal
 - 25% of total amount after 20-30 DAT
 - 25% of total amount after 40-45 DAT
4. The rice variety that will be used is Radha-32.
5. For sampling - sample weekly for each treatment, count the number of tillers, record plant height, disease intensity, insect pest and natural enemy density. At the end of the season measure the yield.

Analysis:

1. In terms of yield, treatment 4 has the highest return but other treatments also produce higher return. It is therefore recommended that farmers should plant fertilizer responsive variety if they want to get better return in fertilizer application.

Figure__. Yield on plant response to different nitrogen dosage trials in TOT site.



Discussion:

1. Population densities of pests and natural enemies are almost identical to all treatments as seen in the tables below.

Annexation 3

Growing a Healthy Crop II: Varietal Monitoring

Introduction:

Varietal resistance and nitrogen fertilizer levels primarily control diseases of rice. Plant resistance characteristics may change from location to location due to soil and weather. The need for BPH resistance may also change from area to area. BPH resistance is not usually necessary in areas with heavy pesticide usage. This study demonstrates how to monitor varieties locally.

Methodology:

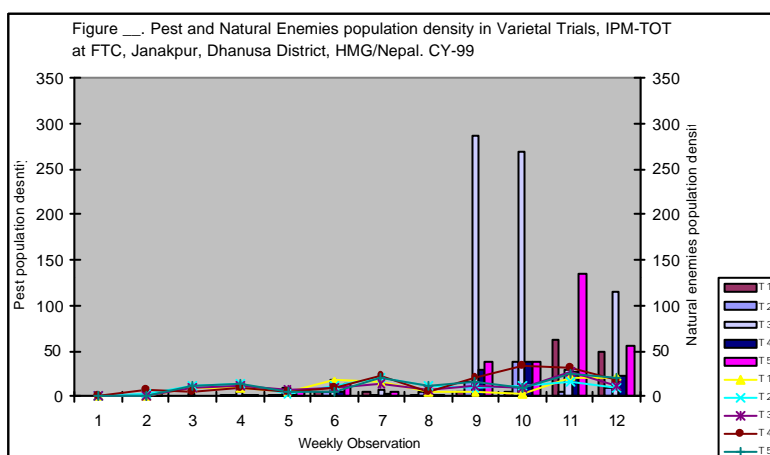
1. Use IPM agronomic practices.
2. Suggested plot size was 5 X 3 sq. meter per variety to be tested. In this study, at least 9 varieties including the commonly used variety in the village should be planted.
3. Sampling. For each variety being monitored. Sample weekly for each treatment, count the number of tillers, record plant height, disease intensity, insect pest and natural enemy density. At the end of the season measure the yield.
4. Different treatment are as follows:

Row 1	Row 2	Row 3
Radha-11	Makwanpur	Bhutia local
Radha-4	IR-51472	AS-781
Sabitri	Radha-7	Sabitri
AS-781	Sabitri	Makwanpur
Bhutia local	Radha-32	Radha-7

5. Specifications:
 Plot size = 5 X 3 sq. m
 Border w/in plot = 0.3 m.
 Border w/in block = 0.5 m.
 Fertilizer requirement = 100:30:30
 No. of seedling /hill = 3
 Spacing (planting density = 20 X 20 cm.

Discussion:

1. The development insect pests and natural enemy density is shown in this figure. Note the population of pest in weeks 9 & 10 was unusually higher because of high population of brown plant hoppers induce by weeklong heavy rains.



Annexation 3

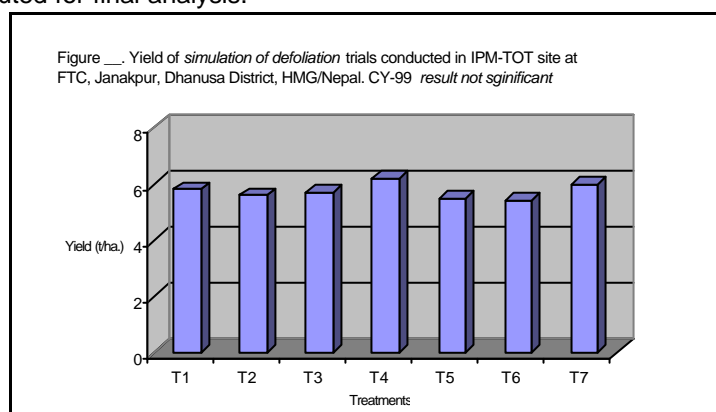
Making Field Observations I: Simulation of Defoliation (Leaf Cutting)

By way of introduction:

Plants, like rice, generally produce large number of leaves to ensure healthy growth. In fact, it is possible that excess leaves are produced to offset damage made by herbivores. Similarly, rice plants can produce leaves to compensate for those damaged by herbivores. Hence, it is important to understand this concept to facilitate a better pest management decision making. If farmers understand that certain levels of leaf damage do not lead to yield reduction, they are less likely to take ameliorative actions. Hence, undertaking plant compensation will assist natural enemy conservation.

Methodology:

1. Use IPM agronomic recommendations.
1. There are 7 treatments, which should be replicated 4 times per treatment. Plots may be small (2 X 1 sq. meter). Leaf cutting means to cut each leaf on the plant. Twenty five percent (25%) means one quarter of the leaf blade, 50% means one half of the leaf blade and 75% means two third of the leaf blade.
 - T1. At 15-25 DAT, cut 25% of all leaves in 1 sq. meter block.
 - T2. At 15-25 DAT, cut 50% of all leaves in 1 sq. meter block.
 - T3. At 15-25 DAT, cut 75% of all leaves in 1 sq. meter block.
 - T4. At 25-35 DAT, cut 25% of all leaves in 1 sq. meter block.
 - T5. At 25-35 DAT, cut 50% of all leaves in 1 sq. meter block.
 - T6. At 35-45 DAT, cut 25% of all leaves in 1 sq. meter block.
 - T7. Control: No leaf cutting
3. Cages may or may not be used. In the case that cages are not used, the actual level of leaf damage should be computed for final analysis.
4. Sampling method: Weekly samples the tiller number, percent (%) deadhearts and percent (%) whiteheads. Measure the plant height before and after cutting the leaves.
5. Note any insect, disease or rat damage. At the end of the season, measure the yield of the 1 sq. meter block.



Discussion:

This study shows that it is possible that excess leaves are produced to offset damage made by herbivores. Similarly, rice plants can produce leaves to compensate for those damaged by herbivores. The results of yield clearly shows these observations that plant are able to compensate for damage caused by defoliators.

Annexation 3

Making Field Observations II: Simulation of Stemborer Damage

Introduction:

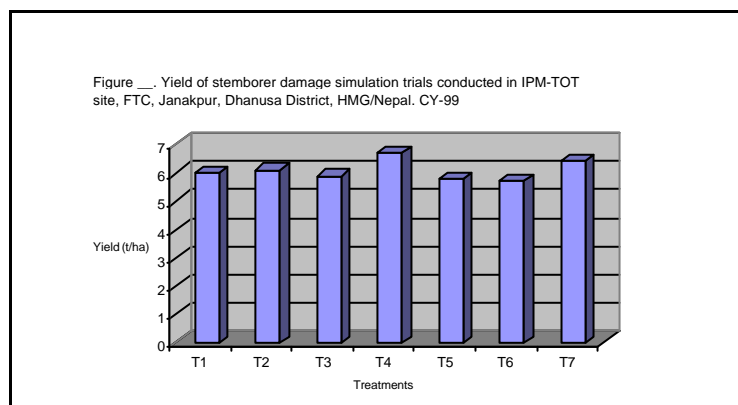
Not all stemborer damage results in yield reduction. Rice plants are able to compensate for stemborer damage. In experiments conducted in different countries, damage greater than 25% deadhearts and 50% whiteheads lead to yield loss. Of course the exact levels will be different with changes in fertilizer levels, variety, weather and other types of damage. This study demonstrates the level of plant compensation possible due to damage similar to stemborer damage. It should be noted that the method used in this study (tiller cutting) has been studied and closely simulates actual stemborer damage.

Methodology:

1. Use IPM agronomic recommendations.
2. There are 10 treatments, which should be replicated 3 times per treatment. Plots measured 2 X 1square meter. The rice variety that will be used is Radha-32.
 - T1. At 15-25 DAT, cut 10% of tillers in 1 sq. meter block.
 - T2. At 15-25 DAT, cut 20% of tillers in 1 sq. meter block.
 - T3. At 15-25 DAT, cut 30% of tillers in 1 sq. meter block.
 - T4. At 25-35 DAT, cut 10% of tillers in 1 sq. meter block.
 - T5. At 25-35 DAT, cut 20% of tillers in 1 sq. meter block.
 - T6. At 25-35 DAT, cut 30% of tillers in 1 sq. meter block.
 - T7. At 35-45 DAT, cut 5% of tillers in 1 sq. meter block.
 - T8. At 35-45 DAT, cut 10% of tillers in 1 sq. meter block.
 - T9. At 35-45 DAT, cut 15% of tillers in 1 sq. meter block.
 - T10. Control. No tiller cutting
3. Sampling: For each treatment being tested, sample weekly the number of tillers per plant, plant height, and record actual stemborer damage. At the end of the season measure yields.

Discussion:

1. This study demonstrates the level of plant compensation possible due to damage similar to stemborer damage. It should be noted that the method used in this study has been studied and closely simulates actual stemborer damage. It shows that limited damage of stemborer will have no effect in rice plant because it can compensate to such damage.



Annexation 3

Farmers Becoming Experts in Their Own Fields: Comparative Study of Farmers' Crop Protection Practice and IPM Methods

Introduction:

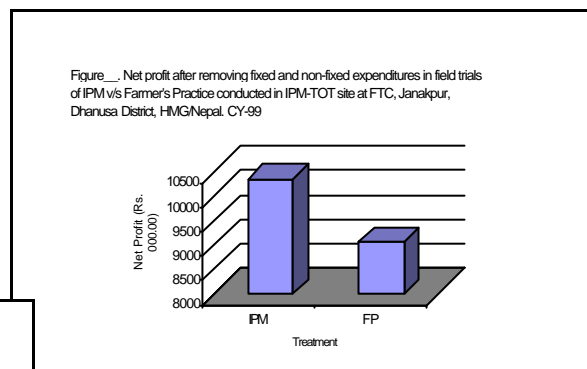
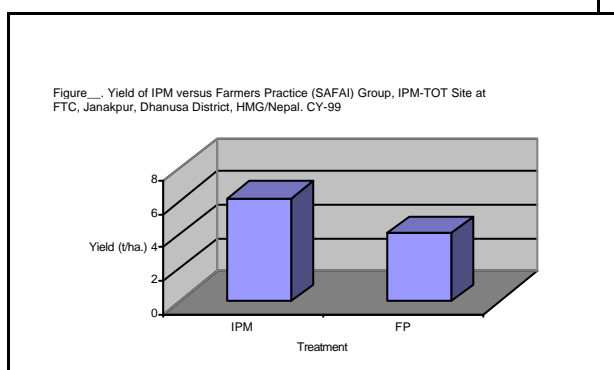
This study is designed to compare IPM methods with local farmers' practices or conventional methods. Let farmers test IPM methods and convince themselves of the merits of IPM methods. There are two (2) treatments, which should be prepared on large plots (at 2 blocks of fields owned by the same farmer co-operator) and compared. In many programs, farmers and trainers will change "Farmer Practice" during the season as they learn more about the ecosystem and realize much that less pesticide or fertilizer is necessary compared to that previously used. It is therefore very important to set "Farmer Practice" beforehand and to implement it based on the usual practices.

Methodology:

3. The rice variety that used was Radha-32.
4. Aside from the amount of fertilizer and timing of application, each treatment used same agronomic practices.
3. Sampled weekly all the ten-staked plants. Counted the number of insects, disease or any other damage. Record deadhearts and whiteheads.
4. At the end of the season, measure yield from a 2 X 5 block.

Analysis:

1. Make graph of the herbivores and natural enemy population.
2. Make cost-benefit analysis of all the treatments. Include health and environmental impacts if possible.



Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 1 (Soil Management)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Registration DYAT Group Formation Expectation checking House rules and agreements	Formation of committees Principle of IPM Orientation of the program Selecting and designing of basic field studies	Selecting and designing of basic field studies (contd.) Field activities: Site observation	Gender role analysis Field activities: Study plots lay out	Concept of FFS Use of NFE in IPM Andragogy Pedagogy	Visit to proposed FFS sites
L U N C H B R E A K					
Opening ceremony	Team building exercise (picture frame) Observation of rice plant at nursery stage	Group dynamic (symbolic expression) Seed germination test Group formation for FFS	Study plots layout	Ice breaking Preparation for field visit on proposed FFS sites	Group dynamic Feed back of field visit

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District
27 June – 15 October 1999

Week 2 (Seedling stage) (0-6 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Record keeping of germination test Transplanting of trials	Transplanting of trials (contd.)	Field activities: Rice seedling morphology - Processing - Presentation	Field activities: Process of seed germination (contd.) Ballot Box Pre test	Field observation Ecological function of organisms	Conduct of regular FFS
L U N C H B R E A K					
Transplanting of trials	Transplanting of comparative study: Farmer practices Vs IPM	Group dynamic Result of seed germination test - Process of seed germination	Follow up FFS	Discussion on trials of FFS Preparation of FFS Guide Preparation for FFS	Feed backs of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District
27 June – 15 October 1999

Week 3 (Early tillering stage) (7-13 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Pegging Discussion on sampling methods Follow up FFS (Pipra and Banaauli)	Field activities: <ul style="list-style-type: none"> Monitoring of field trials 	Field activities: Discussion on the condition of the rice field Discussion about cup study	Field activities: Conduct of AeSA # 1 <ul style="list-style-type: none"> Processing by small groups Presentation to big group, and Discussion 	Field activities: Establishment of Insect Zoo	Conduct of regular FFS
L U N C H B R E A K					
Field Activities: What is this? What is that? (Role playing)	Group Dynamics Activities: Bamboo Bridge	Introduction of Insect Zoo Group proposal of insect zoo	Special Topic: Morphology of rice plant	Preparation of FFS guide Field follow-up of FFS	Feedback's of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 4 (Tillering stage)
(14 - 20 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Simulation trails (leaf cutting & Tiller cutting)	Field activities: • Monitoring of field trials	Field activities: Plant roots & vessel experiment (Pesticide & nutrient uptake)	Field activities: Conduct of AeSA # 2 • Processing by small groups • Presentation to big group, and • Discussion	Field activities: Preparation Ballot Box Pre test of FFS	Conduct of regular FFS
L U N C H B R E A K					
Collection & introducing in insect zoo	Group Dynamics Activities Much Winning Facilitation skill	Broken balloon Tillering stage	Special Topic: Weed Management	Preparation of FFS guide Field follow-up of FFS (case to case basis)	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 5 (Late tillering stage)
(21-26) DAT

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
<p>Field activities:</p> <p>Checking of insect zoo and pot studies</p> <ul style="list-style-type: none"> Processing by small groups Presentation to big group, and Discussion 	<p>Field activities:</p> <ul style="list-style-type: none"> Monitoring of field trials 	<p>Field activities:</p> <p>Checking of insect zoo and pot studies</p> <p>Collection of suspected Blast & BLB from rice & other alternative hosts for pot study</p>	<p>Field activities:</p> <p>Conduct of AeSA #3</p> <ul style="list-style-type: none"> Processing by small groups Presentation to big group, and Discussion 	<p>Field activities:</p> <p>Checking of insect zoo and pot studies</p> <p>Mealy Bugs (Brevennia rehi) Collection and identification</p>	<p>Conduct of regular FFS</p>
L U N C H B R E A K					
<p>Participatory Discussion: Nursery management of rice plant</p>	<p>Group Dynamics Activities:</p> <p>Tower making</p> <p>Case study at farmer's field</p>	<p>Discussion and basic experiment:</p> <p>Effect of pesticides on pest and natural enemies</p>	<p>Field Visit: NARP, Hortinath Dhanusha</p>	<p>Preparation of FFS guide</p> <p>Preparation for FFS</p>	<p>Feedback's of FFS result</p> <p>Planning and Evaluation</p>

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 6 (Maximum tillering stage)
(28-34 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
<p>Field activities:</p> <p>Leaf before and after P.I.</p> <p>Leaf cutting & Tiller cutting (30 DAT)</p> <p>Report presentation</p>	<p>Field activities:</p> <ul style="list-style-type: none"> Monitoring of field trials 	<p>Field activities:</p> <p>Checking of insect zoo and pot studies</p> <p>-Processing</p> <p>-Presentation</p> <p>Pit Fall Trap</p> <p>Monologue on pesticide</p>	<p>Field activities:</p> <p>Conduct of AeSA #4</p> <ul style="list-style-type: none"> Processing by small groups Presentation to big group, and Discussion 	<p>Field activities:</p> <p>Checking of insect zoo and pot studies</p> <p>Life cycle and food web</p>	<p>Conduct of regular FFS</p>
L U N C H B R E A K					
<p>Participatory Discussion:</p> <p>Population dynamics of rat</p>	<p>Group Dynamics Activities</p> <p>Habitat study (Pit Fall Trap & preparation Seedbed study)</p>	<p>Monologue on pesticide application and its hazards</p>	<p>Special Topic:</p> <p>-Rice com fish culture in context IPM</p>	<p>Preparation of FFS guide</p> <p>Field follow-up of FFS (case to case basis)</p>	<p>Feedbacks of FFS result</p> <p>Planning and Evaluation</p>

Annexation 4

Weekly Training Schedule
 TOT on IPM -Rice
 FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 7 (Panicle initiation stage)
 (35-41 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Checking of group studies including insect zoos and pot studies <ul style="list-style-type: none"> • Processing by small groups • Presentation to big group, and • Discussion 	Field activities: <ul style="list-style-type: none"> • Monitoring of field trials 	Field activities: Presentation of monitoring trials	Field activities: Conduct of AeSA #5 <ul style="list-style-type: none"> • Processing by small groups • Presentation to big group 	Field activities: Midterm Writing and identification Insect zoo -Processing - Presentation	Conduct of regular FFS
L U N C H B R E A K					
Participatory discussion: P. I. Stage	Group Dynamics Activities Aquarium study	Participatory discussion: Leaf folder	Presentation AESA # 5 (contd) Discussion	Preparation of FFS guide Preparation for FFS	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
 TOT on IPM -Rice
 FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 8 (Booting stage) (42-49 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Collection of stem borer Establishment of Malaise Trap PD.: Stem borer	Field activities: <ul style="list-style-type: none"> • Monitoring of field trials • Observation -Leaf before and after PI - Malaise Trap	Field activities: Spider scouting and collection deferent species spider	Field activities: Conduct of AeSA #6 <ul style="list-style-type: none"> • Processing by small groups • Presentation to big group, and • Discussion 	Field activities: Checking of insect zoo and pot studies -Processing -Presentation What LD 50	Conduct of regular FFS
L U N C H B R E A K					
Special topic Identification of Natural Enemies	Group Dynamics Activities Processing and presentation Malaise Trap	Home visit to follow-up FFS participants	Special Topic: Booting stage	Preparation of FFS guide Field follow-up of FFS (case to case basis)	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 9 (Heading stage)
(50-56 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Case study Of Gall midge in Makawanpur District	Field activities: Monitoring of field trials Observation of leaf before and after PI.	Field activities PD.: Rice Hispa	Field activities: Conduct of AeSA #7 <ul style="list-style-type: none"> • Processing by small groups • Presentation to big group, and • Discussion 	Field activities: Checking of insect zoo and pot studies	Conduct of regular FFS
L U N C H B R E A K					
Case study contd.	Group Dynamics Activities Processing and presentation of Gall midge (case study)	Leaf before and after PI. -Processing and presentation	Special Topic: Weed Management	Preparation of FFS guide Preparation for FFS	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 10 (Flowering stage)
(57-63 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Case study: Case worm at Dhanusha District Collection insect for box collection	Field activities: <ul style="list-style-type: none">Monitoring of field trialsBarlize Trap	Field activities PD.: Rice Bug	Field activities: Conduct of AeSA #8 <ul style="list-style-type: none">Processing by small groupsPresentation to big group, andDiscussion	Field activities Special topic: Heading and flowering stage	Conduct of regular FFS
L U N C H B R E A K					
Participatory discussion: Case worm	Group Dynamics Activities Barlize Trap (contd.)	Insect Zoo: -Processing and -Presentation	Special Topic: Rodent management	Preparation of FFS guide Preparation for FFS	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 11 (Milking stage)
(64 - 70 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Checking of group studies including insect zoos and pot studies <ul style="list-style-type: none"> • Processing • Presentation t • Discussion Berlize Trap <ul style="list-style-type: none"> • Processing • Presentation 	Field activities: <ul style="list-style-type: none"> • Monitoring of field trials • Ditillering 5 hill per group at IPM Practice 	Field activities: Trap for Rice bug Seedbed study <ul style="list-style-type: none"> - Processing - Presentation 	Field activities: Conduct of AeSA #9 <ul style="list-style-type: none"> • Processing by small groups • Presentation to big group, and • Discussion 	Field activities: Preparation and discussion of Field Day	Conduct of Regular FFS
L U N C H B R E A K					
Presentation of field trials report	Group Dynamics Activities Milking stage	Follow Up FFS	Special Topic: Diseases Management	Preparation of FFS guide Preparation for FFS	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 12 (Dough stage)
(71 - 77 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field Activities: Hoppers of rice - Observation , collection of hopper - Cup study spider v/s hoppers	Field activities: <ul style="list-style-type: none"> Monitoring of field trials 	Field activities: Economic Analysis Study habitat - Processing - Presentation - Discussion	Field activities: Conduct of AeSA #10 <ul style="list-style-type: none"> Processing by small groups Presentation to big group, and Discussion 	Field activities: Soil field walk - Discussion in small group - Processing - Presentation	Conduct of regular FFS
L U N C H B R E A K					
Continue :Hoppers of rice - Processing - Presentation - Discussion	Group Dynamics Activities Communication skill	Friends of farmers	Special Topic: Spider PD.: Dough stage	Preparation of FFS guide Preparation for FFS	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
TOT on IPM -Rice
FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 13 (Hard dough stage)

(78 - 84 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Field activities: Case study, in Kapileshwor Dhanusha	Field activities: Monitoring of field trials	Visit to Farmer field school, Budhabare, Jhapa (Run by Farmer)	Visit to Ilam	Follow up of FFS	Conduct of regular FFS
L U N C H B R E A K					
Field activities: Follow up FFS	Study Tour To Jhapa	Trip to Ilam	Return to Janakphur	Preparation of FFS guide, and FFS Special topics -Behaviour & motivation	Feedbacks of FFS result Planning and Evaluation

Annexation 4

Weekly Training Schedule
 TOT on IPM -Rice
 FTC, Janakpur, Dhanusha District

Training of Trainer (TOT) on IPM Rice FTC, Dhanusha District, Janakpur 27 June – 15 October, 1999

Week 14 (Maturity stage)
 (85 - 91 DAT)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Preparation for field day	Field activities: Monitoring field trials PD.: Maturity stage	Ballot Box Test	Preparation for farmer field day	Preparation for farmer field day	Preparation for farmer field day
L U N C H B R E A K					
Preparation for Ballot Box Test	Special topic: Environment Impact Assessment	Ballot Box Test in Dhanusa District FFS	Ballot Box Test in Mahottori District FFS	Community IPM Preparation for farmer field day	Preparation for farmer field day

Note: Saturday Farmer Field Day in Mahottari District.

Annexation 4

Weekly Training Schedule
 TOT on IPM -Rice
 FTC, Janakpur, Dhanusha District

Training of Trainers (TOT) on IPM Rice

FTC, Janakpur, Dhanusha District

27 June – 15 October 1999

Week 15 Field day/Graduation & harvesting

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Preparation for farmer field day	Farmer Field Day in Dhanusha District	Preparation for Field Day	Preparation for Field Day	Field day	Simplified Statistics
L U N C H B R E A K					
Preparation for farmer field day	Farmer Field Day in Dhanusha District	Preparation for Field Day	Review of 14 weeks activities	Field day	Harvesting

Week 16 Final Report

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Participatory Evaluation & Planning	Human Creativity & Basic Theater Arts	Reporting	Networking in IPM	Midterm	Departure
L U N C H B R E A K					
Reporting	Reporting	Reporting	Presentation	Midterm	Departure

Annexation 5

List of Farmers Field School

Group No.	Name of FFS/ Place	Participant		Major activities Completed	Date of transplanting/V ar.
		Male	Female		
1	Shree Annapurna Krishak Pathshala Khairawa, Ekarahiya 5, Mahottari	29	-	Est. of FFS, transplanting, Pegging, crop calendar and a nd farm practice, GAM, Agroecosystem function	July 16, 1999 Masuli
2	Bidhyapati Krishak Patshala FFS Kurtha 8, Dhanusa	30	19	Est. of FFS, Introduction of IPM-FFM, GAM, problem identification, Aesa #1, Ballot Box Test	July 9, 1999 Masuli
3	Shree Bidhyapati Gadh FFS Banauli, Mahottari	23	-	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, seed germination test	July 16, 1999 Makawangu a-1
4	Shiva Krishak Patshala FFS Mahuwa 4, Dhanusa.	31	3	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, seed germination test, Ballot Box test, Int. of AeSA	July 9, 1999 Janaki
5	Saraswoti Krishak Patshala FFS Pipara –2, Mahottari	14	21	Establishment of FFS, Introduction of IPM FFS, Transplanting, and Ecological Function of Ecosystem.	July 17, 1999 Kanekhi Masuli
6	Saraswati Krishak Patshala Sahorwa 6, Mahottari	19	11	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, seed germination.	July 16, 1999 Rampur Masuli
7	Shree Tapasi FFS Agilesawa 4, Sapahi, Dhanusha	30	5	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, seed germination test, Ballot Box Test	July 9, 1999 Radha Jaya
8	Shree Janajyoti Attarar, Ekraiha-7 Mahottari	17	15	Est. of FFS, Transplanting, pegging, Ballot box test, Introduction of IPM-FFS, Leaf cutting and tiller cutting etc.	July 9, 1999 Sabitri
9	Ram Janaki FFS Kapileshor-14, Janakpur Dhanusa	29	-	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, seed germination test, Ballot Box Test	July 9, 1999 Radha 17
10	Jagruti Krishak	31	-		July 9, 1999

Annexation 5

	Patshala Kabirgama Bramapura 7&8, Mahottari			Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, Socio economic data collection,	Masuli
11	Jaya Hanuman FFS Basahiya 8&9, Sonapara, Dhanusa.	21	10	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection,	July 16, 1999 Sabitri
12	Radha Krishna FFS SinurjodaVDC 1, Sohani, Dhanusa	31	-	Est. of FFS, transplanting of study plot, Introduction of IPM-FFS, GAM, Socio –economic data collection, Tiller cutting and leaf cutting	July 9, 1999 Masuli

Annexation 6

Gender Profile of the 12 Farmer Field Schools

IPM-TOT, FTC, Janakpur, Dhanusa District

No.	Name of Farmers' Field School	Male	%	Female	%	Total
1	Shree Annapurna Krishak Pathshala Khairawa, Ekarahiya 5, Mahottari	29	100%	0	0%	29
2	Bidhyapati Krishak Patshala Kurtha 8, Dhanusa	30	61%	19	39%	49
3	Shree Bidhya-Pati Gadh Krishak Pathshala Banauli, Mahottari	23	100%	0	0%	23
4	Shiva Krishak Patshala Mahuwa 4, Dhanusa.	31	91%	3	9%	34
5	Saraswoti Krishak Patshala Pipara -2, Mahottari	14	40%	21	60%	35
6	Saraswati Krishak Patshala Sahorwa 6, Mahottari	19	63%	11	37%	30
7	Shree Tapasi Krishak Pathshala Agilesawa 4, Sapahi, Dhanusha	30	86%	5	14%	35
8	Shree Janajyoti Krishak Pathshala Attarar, Ekraiha-7 Mahottari	17	53%	15	47%	32
9	Ram Janaki Krishak Pathshala Kapileshor-14, Janakpur, Dhanusa	29	100%	0	0%	29
10	Jagriti Krishak Patshala Kabirgama, Bramapura 7&8, Mahottari	31	100%	0	0%	31
11	Jaya Hanuman Krishak Pathshala Basahiya 8&9, Sonapara, Dhanusa.	21	68%	10	32%	31
12	Radha Krishna Krishak Pathshala SinurjodaVDC 1, Sohani, Dhanusa	31	100%	0	0%	31
Total		305	78.4%	84	21.6%	389

Annexation 7

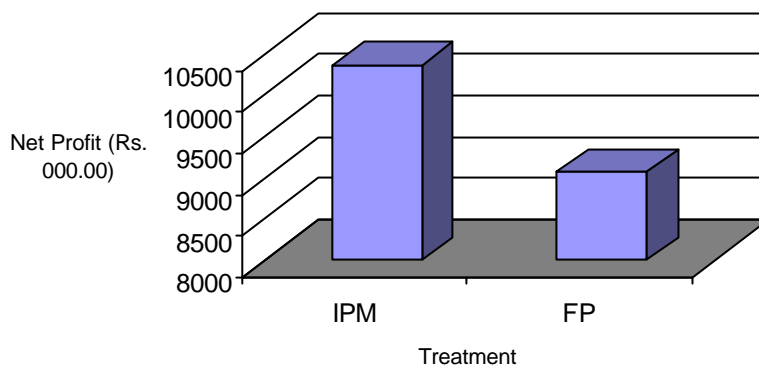
Economic Analysis of farmers Practice vs. IPM Practice

(Area: 150 square meter.)

SN	Activities	Farmers Practice			IPM Practice		
		Qty.	Rate(rs)	Total(rs)	Qty.	Rate(rs)	Total(rs)
A	Inputs						
1	Seed bed preparation						
	Ploughing	0.6 man/day	200	120	0.6 man/day	200	120
	Labour	0.6 man/dy	80	48	0.6 man/day	80	48
	Seed	0.75 kg	15	11.25	0.75 kg	15	11.25
	Compost	75 kg	0.5	37.5	75 kg	0.5	37.5
	Fertilizer						
	Urea	0 kg			1.2 kg	9	10.8
	DAP	0 kg			.975 kg	19	18.53
	Potas	0 kg			.75 kg	8	6
2	Land preparation						
	Ploughing\Puddling	.225 man/day	200	45	.225 man/day	200	45
	Labour	.6 man/day	80	48	.675 man/day	80	54
	Compost	0 kg			120 kg	0.5	60
	Fertilizer						
	DAP	1.35 kg	19	25.65	.975 kg	19	18.53
	Urea	2.25 kg	9	20.25	2.865 kg	9	25.79
	potash	0 kg			.75 kg	8	6
3	Pesticide	1 kg	100	100	0 kg		
4	Weeding	.45 man/day	80	36	.675 man/day	80	54
5	Irrigation						
	Labour cost	.18 man/day	80	14.4	.225 man/day	80	18
	Channel rep. and management			4.5			4.5
6	Monitoring			3			3
7	Harvesting and threshing	.825 man/day	80	66	.825 man/day	80	66
8	Cleaning drying and storing	.075 man/day	80	6	.105 man/day	80	8.4
9	Land tax			1.5			1.5
10	Contingency		5% of total	24.91		5% of total	30.79
	Total Inputs			611.96			647.59
B	Output						
1	Rice grain	67.29 kg	10	672.9	71.29 kg	10	712.9
2	Rice straw	25kg	3	75	30 kg	3	90
C	Net income			135.94			155.31
D	B/C Ratio			1.22			1.24
This figure is for 150 square meter. So, the figure for one hectare will be as follows:							
	Area	Practice					
	One hectare		IPM	FP			
			10354	9,062.67			
	Difference		1291.33 rs				

Annexation 7

Net profit after removing fixed and non-fixed expenditures in field trials of IPM v/s Farmer's Practice conducted in IPM-TOT site at FTC, Janakpur, Dhanusa District, HMG/Nepal. CY-99



Annexation 8

Management of the TOT

During the workshop, the group was able to define the job description and tasks for each core-IPM trainers in the TOT. The objective of which is to transfer management of IPM training to local trainers and to make sure of an effective monitoring and backstopping systems including trainees reporting and quick response to requests of trainers and trainees. Among the management aspect of the training that will be handled by the trainers are the following:

1. Resident TOT Coordinator – Mrs. Sashi Adhikari

During the 16 weeks TOT, the resident TOT coordinator shall:

- Oversees day-to-day activities in consultation with the different sectoral/area or group coordinators;
- Presides over management meetings, including facilitation of problem-solving sessions and decision-making/planning activities;
- Ensures the conduct of or submission of process documentation on a regular and timely basis (e.g., trainers' training process and FFS sessions);
- Monitors implementation of planned activities on a daily basis;
- Reviews training report prepared by the participants and submit the same to National IPM Program Coordinator or the GCP/RAS/172/NOR Program Officer;
- Regularly updates office of National IPM Program regarding the on-going TOT activities; and
- With Participant Welfare coordinator, outline security, medical, evacuation plan for all participants.

2. FFS Coordinator - Rathna Jha and R. C. Yadav

During the 16 weeks TOT, the FFS coordinators shall:

- Ensures that FFS selected had conform to proposed criteria;
- Design and suggest monitoring forms for the different field studies in the FFS;
- Maintain up to date records of the progress of the field studies in the FFS, e.g.
- Field studies, insect zoos, village map, documentation book; visitor's book, and others;
- Determines and assesses field situation (i.e., water supply, among others) and feed backs the same to trainer's team concerned;
- Co-ordinates with persons in-charge of training materials for FFS needs;
- Organize transport and snacks requirements for FFS; and
- Monitor's farmers attendance at the FFS level.

Annexation 8

3. Training Materials and Supplies Coordinator – Mr. A. Regmi

During the 16 weeks TOT, the training materials and supplies coordinator shall:

- Lists materials needed for each session based on regular management meetings;
- Co-ordinates with all sectors to ensure that materials needs are purchased on time;
- In co-ordination with host teams distributes/provides materials to each group as needed;
- Follows up non-consumable materials loaned out to groups;
- Links up with Field Trials and FFS Coordinator on materials needs; and
- Maintain up to date records on the utilization of training materials.

4. TOT Field Trials Coordinator - S. C. Parashar and S. Rijal

During the 16 weeks TOT, the field trials coordinators shall:

- Designs and provides suggestions on trials for TOT;
- Maintain a Field Trial Book with trials procedures, implementing dates, and field layouts;
- Maintain a calendar of activities for all trials and ensures that they are implemented strictly as planned;
- Organizes materials (seeds, fertilizers, others) and equipment(plow, tractors, others) needs for field trials;
- Co-ordinates with Materials Coordinator for materials requirements; and
- Keep an up to date record of trials results;

5. Recreation and Participants' Needs/Welfare Coordinator – Mr. H. Gurumaita

During the 16 weeks TOT, the recreation and participants' needs/welfare coordinator shall:

- Looks into training-related individual/personal needs of participants, including health concerns;
- See to it that all participants are in good health;
- Prepare games and other recreational activities for the participants;
- Keep and see to it that all recreational materials and games equipment are ready and available;
- Take charge of the rules and regulation concerning recreation;
- Takes charge of participants' whereabouts; and
- Strictly enforce training norms;

6. Training Record and Documentation Coordinator – S. C. Parashar and S. Rijal

During the 16 weeks TOT, the records and documentation coordinators shall:

Annexation 8

- Keeps record of the daily training activities and at the end of the day writes a one page highlights;
- Maintains Nepalese and English translation of the daily training highlights and have this inputted in a computer;
- Co-ordinates with other coordinators to ensure that each group of participants maintains a record of group's activities;
- Submits periodically record of TOT activities to the Training Coordinator and IPM Technical Advisor, the National IPM Program Office, and GCP/RAS/172/NOR Program Officer.

7. Food and Hygiene Coordinator - Rathna Jha and Gurumaita

During the 16 weeks TOT, the food and hygiene coordinator shall:

- In agreement to all TOT participants, supervise the preparation of the menu for the week;
- Oversee the marketing of food and other related supplies;
- See to it that food is available in time and safe; and
- Sees to it that the kitchen and mess hall is always ready and clean.

8. Main terms of reference of the TOT core-IPM training team:

- Facilitation of the training;
- Giving of special topics;
- Supervision of groups;
- Giving technical comments and analysis of problems;
- Become good role model for the participants; and
- Record keeping.

Annexation 9

RESULT OF BALLOT BOX TEST

(PRE & POST TEST)

IPM-TOT, FTC, Janakpur, Dhanusa District

No.	Name of Participants	Pre- test	Post-test	Remark
*Scores from out of 20 questions				
1	Abadesh Kumar Singh	13	18	
2	Achyut Prasad Adhikari	15	17	
3	Basu Dev Sharma Pokharel	13	20	
4	Bishanu Bahadur Adhikari	14	20	
5	Dev Saran Sah	12	20	
6	Gobardhan Adhikari	11	19	
7	Govinda Prasad Barakoti	17	18	
8	Gun Bahadur Thapa	13	18	
9	Hari Bahadur K.C.	16	20	
10	Harihar Adhikari	15	19	
11	Hem Raj Pokharel	14	18	
12	Hom Raj Bista	15	16	
13	Indra Rai	9	19	
14	Kishor Kumar Bhattarai	15	20	
15	Laxmi Prasad Kharel	12	20	
16	Lekhanath Kafle	13	19	
17	Mahesh Chandra Acharya	18	20	
18	Mahesh Chandra Regmi	14	19	
19	Narayan Kumar Shrestha	16	20	
20	Navin Kumar Karki	9	20	
21	Nirmala Basnet	14	18	
22	Purushottam Lal Hada	12	20	
23	Rajendra Kumar Malla	16	20	
24	Ramesh Chandra Suvedi	11	17	
25	Ravindra D. Patel	15	20	
26	Sabitra Dhakal	15	20	
27	Shankar Prasad Neupane	12	17	
28	Shrikanta Adhikari	15	18	
29	Shyam sundar Lal Karna	12	20	
30	Shyam Sundar Singh	14	16	
31	Sitaram Luitel	15	19	
32	Surendra Paudel	13	16	
33	Thaman Bdr Karki	16	20	
34	Yam Prasad Paudel	14	18	
35	Purushottam Jha	14	19	

Annexation 10

Result of Examinations (Practical and Theoretical)

IPM-TOT, Janakpur, Dhanusa District, HMG/N

No.	Name of Participants	Ballot Box Evaluation		Theoretical Examinations		Finals (40%)	Total
		Pre-test (15%)	Post-test (15%)	I.D. (15%)	Written (15%)		
1	Abadesh Kumar Singh	9.75	13.5	4.8	7.2	25	60.25
2	Achyut Prasad Adhikari	11.25	12.75	10.2	10.5	25	59.5
3	Basu Dev Sharma Pokharel	9.75	15	10.8	8.7	31	75.25
4	Bishanu Bahadur Adhikari	10.5	15	9	12.3	32	78.8
5	Dev Saran Sah	9	15	8.4	9.9	28	70.3
6	Gobardhan Adhikari	8.25	14.25	9	9.3	26	66.8
7	Govinda Prasad Barakoti	12.75	13.5	6	6.6	24	62.85
8	Gun Bahadur Thapa	9.75	13.5	7.8	9	26	66.05
9	Hari Bahadur K.C.	12	15	13.2	12.6	30	82.8
10	Harihar Adhikari	11.25	14.25	9.6	10.8	22	67.9
11	Hem Raj Pokharel	10.5	13.5	7.2	9.9	25	66.1
12	Hom Raj Bista	11.25	12	10.2	12	25	70.45
13	Indra Rai	6.75	14.25	5.4	7.8	21	55.2
14	Kishor Kumar Bhattarai	11.25	15	12.6	11.7	31	81.55
15	Laxmi Prasad Kharel	9	15	10.2	12.9	35	82.1
16	Lekhanath Kafle	9.75	14.25	10.8	10.2	25	70
17	Mahesh Chandra Acharya	13.5	15	13.8	13.8	32	88.1
18	Mahesh Chandra Regmi	10.5	14.25	9.6	10.5	26	70.85
19	Narayan Kumar Shrestha	12	15	11.4	10.5	24	72.9
20	Navin Kumar Karki	6.75	15	9	9	31	70.75
21	Nirmala Basnet	10.5	13.5	4.8	7.2	12	48
22	Purushottam Lal Hada	9	15	9.6	8.4	27	69
23	Rajendra Kumar Malla	12	15	11.4	11.1	32	81.5
24	Ramesh Chandra Subedi	8.25	12.75	8.4	8.7	21	59.1
25	Ravindra D. Patel	11.25	15	10.8	12.3	27	76.35
26	Sabitra Dhakal	11.25	15	11.4	10.2	31	78.85
27	Shankar Prasad Neupane	9	12.75	11.6	9.3	24	66.65
28	Shrikanta Adhikari	11.25	13.5	10.8	9.3	30	74.85
29	Shyam sundar Lal Karna	9	15	9.6	12	30	75.6
30	Shyam Sundar Singh	10.5	12	4.2	6	14	46.7
31	Sitaram Luitel	11.25	14.25	10.8	11.1	27	74.4
32	Surendra Paudel	9.75	12	2.4	6.6	28	58.75
33	Thaman Bdr Karki	12	15	9	10.2	25	71.2
34	Yam Prasad Paudel	10.5	13.5	8.4	11.4	29	72.8
35	Purushottam Jha	10.5	14.25	7.8	8.1	28	68.65

Annexation 11

A Day in Ramjanaki Krishak Patshala

Cesar V. Galvan cvgipm@ibm.net
FAO Community IPM Program

Walking in ankle deep mud in the rice field, Mr. Bhadai Shaha shouted “*tintapatero, duita gawaro, ek pat beruwa*” (3 rice bugs, 2 stemborer moths and 1 leaf folder larvae) to his group member Mr. Dinesh Thakur who promptly writes down the data. Now what about mitrujib (natural enemies), have you seen any? Dinesh anxiously ask. *Oh mitrujib, there are also many, there they are “duita makura, ek tikuli and chaar ladybird beetle”. Ek chinn, I saw another one, it’s a patingra*” (2 spiders, 1 dragonfly, 4 lady beetles and, 1 grasshopper), replied Bhadai. *What about aquatic insect, are there any microvelias?* Ask Jitendra Kumar Karna who is holding the measurement stick. *I think that’s it for this particular hill*” replied Mr. Bhadai. “*Okay, I’ll count the number of tillers and after that we will measure the plant height*” suggested Jitendra. No! These groups of people are not researchers from NARC they are farmer participants from the Ramjanaki Krishak Patshala (Ramjanaki Farmers Field School) conducting their regular weekly agro-ecosystem analysis (AeSA) in the field.

Back to the classroom, it was a Friday noon. The warm and humid weather in Kapileswor, a village near the town of Janakpurdham is sweltering. Through the classroom window of the local primary school is a stunning view of the community pond, the calm water gleaming in the sunlight is inviting the weary to take a dip. But in the class of thirty-five farmers not a single head is turned towards the window. The farmers are completely immersed in translating the result of AeSA into a diagram that they will present to the big group for discussion. Every Friday morning, the wall of this classroom is pasted with AeSA diagram an artwork of colorful pictures of rice plant and many insects that are present the rice ecosystem.

Indra Rai, a TOT participant from World Education-Nepal, ably facilitated that exchange of views by the farmers. An attractive woman with Tibetan features, Indra Rai and her fellow facilitators, Hom Raj Bista and Thanam Karki comes once a week to share with the farmers their experience and IPM knowledge including today’s main topic. In today’s participatory discussion, they discuss about the life cycle of *gawaro* (stemborer).

Participatory Discussion

Indra Rai started the discussion by asking the farmers, has anyone seen a *gawaro*? One farmer immediately replied that *gawaro* used to bore a hole on the ground and from there it will enter the root and eventually to the stem of the rice plant. Disagreeing, another farmer rises to his seat and proudly informs other farmer that he has observed this *gawaro* coming from the leaves and entering through the leaf sheath. In agreement, another farmer said, after damaging the leaves they will fold it and rest inside the folded leaves during the day. There are many of these *gawaros* in my rice field, he said. Another farmer suggested, isn’t the *gawaro* the ones sucking milk from the grain during milking stage? Everybody in the room burst into laughter. In chorus, they said, no! *gawaros* are very much different from *pateros* (rice bugs).

Annexation 11

The Trainees as Facilitators

The exchanges of opinions and sharing of experiences goes on until finally, Mr. Bista informed the farmers that large numbers of stemborer moths around lights indicate that large number of eggs will be laid in the evening. *Gawaros* eggmasses are usually laid on upper half of a leaf. Eggs turned dark just before hatching. Stemborer larvae migrate to between leaf sheaths. Damage is indicated by larvae with in the stems, signs of a stem being cut by larval feeding. It may occasionally be mistaken for rat damage. But the leaves of plant with deadhearts are easily pulled from the tiller.

Like any other Field School

The farmer's field school in Kapileswor is no different from other FFS being conducted in Nepal. They all started at 7:30 in the morning with the usual recapitulation. Then the farmers will conduct AeSA, drawing and presentation. A simple group dynamics activity is always applied to break the monotonous and enhance the camaraderie among farmer participants. A timely special topics culminates the session that ends up in an evaluation and planning for next weeks activities.

Immediate Impact of the FFS

Although the result of the field trials are not yet available, the impact of the season-long field school is already visible in the faces of the farmers if not in their local economy. Farmers are now able to express themselves freely and were able to express their feelings through their meaningful drawings. Women who are for most of the time are relegated to household chores gamely participated in discussion and sharing. And most of all, farmers can now manage their rice field with out the usual fear of yield loss due to pest and diseases.

Annexation 12

Reporting of Insect Zoo

Group 5: The Spider

Specimen	Date of introduction	Crop stage	Current stage of specimen	Specific Observation	Major findings	Conclusion	Recommendation
Stem borer	July 15	Late tillering	Larval	10 tillers out of 18 tillers damaged (in 3 hills)	Dead heart is caused by stem borer		Continue the study up to one complete life cycle
Rice bug	July 15	Milking	- Adult - late nymph - Early nymph	75 percent rice grain is damaged. Many nymph	# of nymph not decreasing	Tiger Beetle seems not praying on rice bug.	# of tiger Beetle should increased up to two pair.
Mating Mantis	Aug. 2	Milking, Tilling	Gestation	Alive			Find out gestation Period. Find male & female. Find hatching period.
Unidentified pupae	„	Cup(pot)	Pupae	Pupae	Pupae is not identified		Continuation is necessary. Identification is necessary.
Unidentified egg	„	Cup (pot)	Egg	Egg on peg	„		Identification is necessary . Complete the life cycle.
Mealy bug	July 29	Tillering	Adults are not there.				Continue Exp. Repeat.
Blast	July 27	Seedling	Spot				Continue
Sheath blight	July 15	Milking	Sheath blight (black)	Observed on			Observation should continue

Matter of study: -

(1) Stem borer life cycle : -

-In July 15, '99 introduced six moth of stem borer.

-In July 22, egg mass seen. All adult dead.

-In July 29, out of 18 tillers three tillers look like dead heart.

-In Aug.3,out of 18 tillers 10 tillers were seen dead.(55.5% tillers damaged.)

Recommendation: - continue the study.

(2)Rice bug /Tiger beetle

-July15, introduced 3rice bug & 1 tiger beetle.

-July22, nymph were seen.(#3)

-July29,,, (20). 50% grain were damaged.

--Aug.3, numerous nymph were seen. Different stages. 70 % damaged grain .No visible response of T. beetle.

Annexation 12

Group 2: Tiger Beetle

Activity 1: Habitat Study

(Pit Fall trap)

Objective:

To study the habitat of the insect

Procedure:

3 cups without lid were placed at 3 places in the bund containing water and soap solution on 2nd August 1999.

Today the following observations were taken

Cup I	# of Insect	Cup II	# of Insect	Cup III	# of Insect	Total
	Spider-1		Black Beetle-1		No insect	

Q. What does function / connection of insects you found with rice ecosystem?

Ans. Spider as NE in rice ecosystem & a surface dweller. Black beetle seems like carabid beetle in shape & unidentified.

Activity 2: Weeding in trails

Objectives: Study of crop management

Methodology: Manually

Findings: Different type of weeds like Mothe, Motha, Sama, Banso, Juane & others broad leaves weeds.

Activity 3: Monologue of pesticide

Role-play by Mr. M. Regmi was good

Activity 4: Checking of insect zoo & pot study

Experiment	Installed	No. of insect	Observation	Remarks
1. Study of life cycle of Gundhi bug	3 rd August, 1999	3 (adult)	-	-
2. Study of life cycle of Stem borer (Yellow)	22 nd July, 1999	4 (moth)	<ul style="list-style-type: none"> 3 egg mass found on 28th July, 1999 All moth found dead on 12th July One egg mass found damaged 2 egg masses still not hatched 	-
3. Predating habit of Spider	Do	4 (adult)	<ul style="list-style-type: none"> Cannibalism Predates many sps. Of smaller size insects 	This study is going to be change & installed Mealy bug life cycle study.
4. Study of blast	27 th July, 1999	-	1 blast infected plant was transplanted on 29 th July, the infected (blast spot) leaf dried up.	
5. Study of UI egg mass	27 th July, 1999	One egg mass	Unidentified red pumpkin beetle like is found.	
6. do	Do	Do	Not hatched	
7. do	2 nd August	Do	Do	

Annexation 12

Group 4: SAFAI

Observation on Blast & BLB

Suspected plants:

Dieing & drying of old & infected leaves

No symptoms appeared in new leaves

Monologue on Pesticide & its Hazards

Observation:

- Pesticides was handled with bare hands
- No measuring tools was used
- High dose of Pesticide was used
- Pesticide was directly dissolved on spray tank
- Dirty water was not filtered
- Sprayer's thought was that all the insects pests will be killed
- No care was taken about wind direction
- Spraying was made from back ward – forward
- Spray tank was not handled properly
- Rough spraying – not near the foliage, not uniform
- Smoking & eating during spray time simultaneously
- Disposed the pesticide in the water channel
- Sprayer was not cleaned properly after use
- Pesticide container was not properly disposed
- Change of cloth & bath after spray was not done

Group's Voice:

The role-play found more effective to demons treat "What should not be" in pesticide spraying.

The role-play even found effective for farmer's level.

Checking of Insect zoo & pot study

S N	Topic of study	Date of Introduction	Stage of Insects	Crop stage	Means of study	Observations	Remarks
1.	To study the life cycle of S.B.	056-4-10	Moths	Tillering	Zoo	Eggs (056-4-13) unhatched	
2.	To study the life cycle of Gundhi bug	056-4-2	Adults	„	„	Egg mass 9056-4-3) eggs hatched 4-15 no nymphs observed (056-4-18)	
3.	To study the nature of damage of skipper larvae	056-4-10	Larvae	„	„	Pupation	Study completion
4.	To identify the egg mass	056-4-12	Egg mass	-	Pot	Eggs hatched (4-17)	Spider

Observation of Pit fall trap :

Cup No.	Observation	Total no.	Order	Family	Species	Remarks
1.	Field cricket	2	Orthoptera	Gryllidae	-	
	Frog	1	-	-	-	
2.	Field cricket	1	Orthoptera	Gryllidae	-	
	Frog	2	-	-	-	
3.	Spider	1	-	-	-	

Annexation 12

Group 1: Dragonfly

Observation of Role play (Pesticide spraying)

Observations:

1. Did not identified the insect / disease
2. No information about pesticides
3. Measurement of pesticides by bare hand and not proper amount just wants to make concentrated solution.
4. Put water from rice field without filtering.
5. Improper dispose of empty bottle/packet.
6. Spraying of pesticide in opposite direction of wind that's why pesticide sprayed in his clothes, face, hands etc.
7. Eating banana and smoking without cleaning of hands
8. The remained diluted pesticides was spoiled in the channel and said that the water floods the pesticide.

Suggestions:

1. Identification of insect/disease
2. Correct pesticide with proper dose
3. Use of protective materials properly
4. Proper dispose of empty cane / bottle / packet.
5. Do not eat and smoke while spraying
6. Use of clean and filtered water
7. Do not spoil the pesticide diluted water in channel / pond / river etc.

Observation of Pit fall trap:

Particular	Cup I	No. of ins	Cup II	No. Of ins.	Cup III	No. Of ins.	Total no.
Order	Frog	-	Frog	-	Hopper	1	
Family	Spider	-	-	-	-		
Species							

Observation of insect zoo:

- Gundhi bug eggs still not hatched
 - 1 pair of adult mating
 - On July 30th, introduced 10 rice ear head bug
- 3 egg mass of S.B. eggs lost
- blast infected plant being studied
- BLB suspected plant leaf when kept in a glass of water could not show any symptom of bacterial oozing.

Observation of egg mass in Cup Study:

Suspected egg mass of grasshopper introduced on 2nd Aug did not hatch till today.

Annexation 12

Group 3: Mantid

Activity 1: Weeding

Weeding was done in simulation trail and FP vs. IPM plots

Activity 2: Observation of insect zoo and pot study

Name of study	Installed date	Obs. Date	Findings and/or remarks
Zoo Study :			
1. Identify the egg mass	056-4-7	056-4-18	<ul style="list-style-type: none"> Hatching did not occur Egg mass dead and dried
2. Study on life cycle of skipper	056-4-9 (larvae 3)	056-4-18	<ul style="list-style-type: none"> One larva diseased/parasitized
3. Study on life cycle of YSB	056-4-9 (3 moths)	056-4-18	<ul style="list-style-type: none"> One egg mass did not hatch (dead) Another egg mass expected to be hatched (not hatch yet)
4. Study on reproduction behavior of mealy bug	056-4-17 (Nymph installed)	056-4-18	<ul style="list-style-type: none"> Probably inoculated
Cup Study :			
1. Study on reproduction potential of mantids	056-4-2	056-4-17	<ul style="list-style-type: none"> Approx., 293 nymphs emerged Cannibalism observed
2. Study on parasitoid of FC	056-4-9 (maggots emerged)	056-4-18	<ul style="list-style-type: none"> Puparia observed 056-4-10 Adult fly emerged 056-4-18
3a. Identify suspected GH egg mass	056-4-10	056-4-18	<ul style="list-style-type: none"> Did not hatched (Probably dead)
3b. do	056-4-16	„	<ul style="list-style-type: none"> Did not hatched (Expect to hatch)
4a. Rearing and obs. On Rice skipper larva	056-4-10	056-4-18	<ul style="list-style-type: none"> One parasitized and puparia observed in 4-13, adult not emerged. One in pupal stage One larva diseased, fungal growth obs.
4b. do	056-4-16	„	<ul style="list-style-type: none"> One larva diseased, fungal growth obs.
5. Water tiger rearing	056-4-2	056-4-18	<ul style="list-style-type: none"> Growing
6. Study on Rice mealy bug	056-4-13	056-4-18	<ul style="list-style-type: none"> A maggot observed feeding on nymphs (Probably Syrphid fly) One suspected egg mass (may be of NE's) collected, not hatched yet
7. Study on hunting behavior of Assassin bug (Reduviidae) on rice skipper.	056-4-17	056-4-18	<ul style="list-style-type: none"> One larva killed
Pot Study :			
1. Study on Blast symptoms in relation with progression	056-4-11	056-4-13 056-4-18	Being reared <ul style="list-style-type: none"> Tiller 7, Leaves 25, Spots 13 Tillers 7, Leaves 26, Spots 17

Activity 3: Observation of habitat study

Did not found any IP's and NE's

Activity 4: Monologue of Pesticides and its hazards

- Dressing
 - Apron open on the chest
 - No trouser
 - Bare hands
 - No goggles
 - Water observant type cloth
- Preparation :

Pesticide (?) put with bare hand
No measurement
Did not filter
Directly put into the tank
- During spraying :

Anti-wind direction spraying
Haphazard spraying / not uniform
Did not care for personnel protection
Eat/smoke during spraying
Movement on / to or towards sprayed area
Did not collect / dispose the container properly
After spraying :
Drained the spray residue on moving water
Handled with bare hands.

Weed Management Trial

Introduction:

Growing a healthy crop requires that farmers use appropriate varieties with good seed quality, correctly establish and irrigate the crop, provide adequate nutrition through proper soil fertility and manage the weeds through locally appropriate combinations of cultural practices. However, weed problems cannot be solved by general crop management practices alone. There is a need for the development of integrated weed management systems combining a variety of control measures, that are economically and sustainable. Rather than trying to eradicate weeds from the field, emphasis should be given on the management of weed populations. The development of integrated weed systems requires insight of the behavior of weeds in agro-ecosystems and understanding of the factors that control weed population sizes.

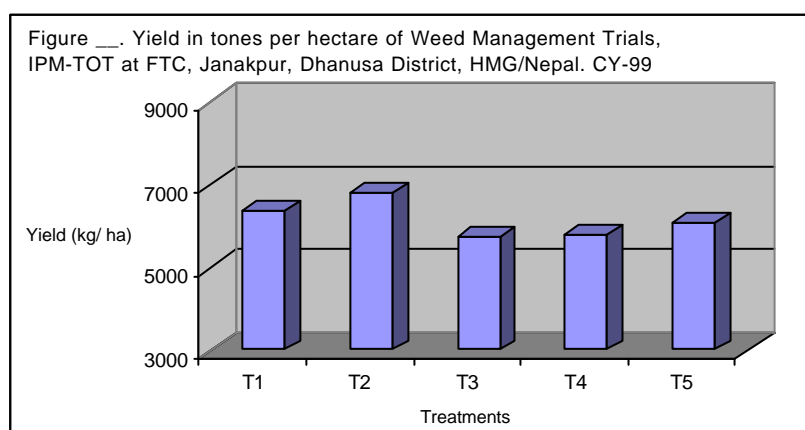
Methodology:

The study was conducted during the normal rice season in TOT site . The trial was designed RCBD with 3 replication and 5

2. Treatments are as follows:
 - T1. At 60 DAT - Conduct hand weeding
 - T2. At 30 and 60 DAT conduct handweeding
 - T3. Use of recommended chemicals
 - T4. Farmers Practice – 10 kilogram of butachlor /hectare
 - T5. Control (no weeding will be done)
2. Use IPM agronomic practices except weeding
3. Sampling for each treatment. Sample weekly for each treatment, count the number of tillers, record plant height, disease intensity, insect pest and natural enemy density. At the end of the season measure the yield.

Analysis:

1. Treatments 2 and 1 has the highest yield result as seen in figure 1 wherein the yield of other treatment are also shown. This trial has recommended treatments 2 and 1 as the most practical method in weed management/method.



Annexation 13

Information: Weed Management Trails

Variety: Radha-32

Date of seeding: 056-2-17

Date Transplanting: 056-3-20

Fertilizer applied: 100-30-30 NPK kg/ha

Average plant height and number of tiller of weed management trial in TOT site.

Week	Plant Height (Average in cm.)					Number of Tillers (Average)				
	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
1	44.2	44.93	43.13	41	42.07	3.4	2.73	2.93	2.8	2.8
2	47.2	46.66	45.53	43.93	44.46	5.6	4.53	4.66	4.73	4.46
3	49.13	50.2	49.93	49.2	48.6	12.53	11.8	11.93	12.13	12.4
4	54.1	56.1	56.2	53.6	54	14.6	16	16.7	16.8	16.4
5	58.7	56.3	59.2	57.9	58.13	16	17	16.9	17.1	18.6
6	66.4	69.3	70	68.7	70.6	16	17.5	17.7	16.9	18.5
7	85.53	77.2	83.66	80.66	80.66	13.66	12.86	14.46	13.73	14.2
8	97.9	100.8	99	100.5	100.1	17.4	16.7	17.2	16.3	17.1
9	100.13	101.63	103.7	101.6	103.93	13.5	14.33	13.6	13.5	14.53
10	99.47	100.2	104.47	102.2	103.8	13.3	14.1	13.5	13.9	14.5

Population density of pests and natural enemies of weed management trials at TOT site.

Pest Population Density					Natural Enemy Population Density				
T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
3	1	1	1	1	6	9	3	7	3
1	4	4	2	6	20	15	16	9	8
4	4	3	2	3	16	12	15	15	14
4	5	2	0	2	8	8	18	12	12
2	1	0	5	3	8	7	4	14	7
8	2	10	9	5	13	14	10	19	11
2	4	3	6	2	20	7	10	14	9
9	5	5	4	6	13	21	9	15	15
11	5	4	41*	7	1	4	2	4	6

Annexation 14

Study of population dynamics of insects (IPS, NES and Decomposers) in different sample detection methods¹

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Hypothesis:

Pegging for sample detection may not give the actual population situation in rice field.

Objective:

To verify the sample detection method- i.e. pegging.

Methodology:

Treatments:

- Usual pegging
- Use of Aluminum tags
- Use of Ribbon tags
- Locating

Replication: 3

Plot size: 1 M² for each treatment.

Use the already transplanted plot near by basic field study trials.

Justification:

Pegging is by far the simplest and easiest way of detecting the samples, however the presence of many unusual insects and other species resting on the pegs, seemed to have influence on higher population of insects in pegged hill than others. So it is implicit to verify the sample detection method.

Result and Discussion:

The observation table presents the number of insects observed in different treatments.

TABLE 1. Population density of insects found in the different sample detection methods.

Treatments	First Observation				Second Observation				Third Observation				Fourth Observation				Fifth Observation			
	R1	R2	R3	Avg.	R1	R2	R3	Avg.	R1	R2	R3	Avg.	R1	R2	R3	Avg.	R1	R2	R3	Avg.
1. Pegging	14	16	10	13.33	11	14	19	14.67	8	11	3	7.33	23	13	8	14.67	4	1	2	2.33
2. Alumin. tag	3	2	2	2.333	16	5	7	9.33	4	5	9	6	13	9	5	9	5	1	2	2.66
3. Ribbon tag	2	6	4	4	6	9	4	6.33	5	7	10	7.33	7	6	7	6.66	4	4	2	3.33
4. Locating	7	4	4	5	2	4	3	3	7	9	8	8	11	11	9	10.33	5	4	2	3.66

Table 2. Observation dates as replication

Treatments	Observation-1 R1	Observation-2 R2	Observation-3 R3	Observation-4 R4	Observation-5 R5
1. Pegging	13.33	14.67	7.33	14.67	2.33
2. Alumin. Foil	2.33	9.33	6	9	2.67
3. Ribbon tag	4	6.33	7.33	6.67	3.33
4. Locating	5	3	8	10.33	3.67

1 Additional study parallel to some of the basic studies being conducted in the IPM-TOT site.

2 Authors (TOT participants) and advisers (IPM Trainers)

Annexation 15

Study of population dynamics of insects and other natural enemies and decomposers with compost and without compost environment.

Hypothesis:

The population of insects (especially aquatic insects) and other natural enemies and scavengers (decomposers) is higher in plots with composts/organic manure than in plots without composts/organic manure.

Justification:

It has been reported that majority of the aquatic insects parasitise on the eggs of insect pest. This makes them very important natural enemies of the insect pest. If compost increases the number of water insects, it will be better to recommend the application of compost to manage the insect pest.

Objectives:

To know the effect of organic matter (composts/manure) on the population dynamics of water living creatures in the rice field.

Methodology:

Variety : Mansuli.

Plot size: 2x2 M²

Treatments:

I. Composting @25 MT/ha.

II. Non-composting.

Fertilisers: 50:30:30 kg NPK/ha in both the treatments.

Date of transplanting: 056/04/10

Date of Observation:

Ist observation: Sampling of water (half litre) at 7 DAT, and observed the number of visible miniatures and other insects.

IInd observation: Sampling of soil with water with the help of sampler sized 20x20 cm² at 15 DAT, three sample from each treatments, aquarium established and observation in aquarium at 25 DAT.

IIIRD observation: Sampling as in IInd observation at 35 DAT, established the aquarium and observation in aquarium at 50 DAT

Annexation 15

OBSERVATION TABLES:

Table 1. Population dynamics of insects in Without Compost and With Compost trials conducted during the IPM-TOT.

Particulars	W/Out Compost				W/ Compost			
	No. of Observations			Total	No. of Observations			Total
	1	2	3		1	2	3	
Culicids	13	0	1	14	40	0	0	40
Maggot/Grub	1	0	0	1	1	3	15	19
Water boatman	0	2	0	2	0	7	0	7
May flies	0	3	0	3	0	0	0	0
Snail	0	2	6	8	0	3	3	6
Flies	0	0	2	2	0	1	0	1
Spider	0	0	0	0	0	0	1	1
Water beetle	0	0	0	0	0	0	1	1
Chironomids	0	0	0	0	0	0	2	2
Other decomposers	0	2	12	14	0	175	3	178
Total	14	9	21	44	41	189	25	255

Note: The differences between the composting and non-composting, $255 - 44 = 211$.

Table 2. Some important parameters observed:

Parameters used data collection	W/out compost plot	Compost plot
Average plant height in centimetres	93.0	110.8
Average No. of tillers/hill	11	13
Panicle length in centimetres	22	22.91
Average grains/panicle	175.7	240.5
Test Weight (1000 grains)		

Discussion of result:

Use of compost enhances the population of decomposers. Good positive effect on survival of NE's. The population of decomposers and neutrals is higher at early stage and while the population of predators (NE's, water beetle, spider, grubs and others) is higher at later stage. The presence of NE's in the aquarium resulted in lower population of water organism in composted sample in third observation, so the role of NE's is very important. The plant height and number of tillers are higher in composted plot as compared to the non-composted plot. This is presented in Table 2. The last important is, no Insect pest found in aquatic condition.

Conclusion:

Aquatic insects are important because they serve as decomposers and as food for the natural enemies. Some of these aquatic insects are also very important natural enemies of major pests in rice ecosystem. The use of compost increases the number of aquatic insects, it will be better to recommend the application of compost as it also increases the yield.

Project Concept Note

Project Title:

PROMOTION OF COMMUNITY IPM PROGRAM THROUGH FARMER
FIELD SCHOOLS

Goal:

Increase the farmer livelihood and food security through sustainable agriculture.

Background:

Nepal is diversified country with different topography of land, climate, ethnic groups and culture. More than half of the population in the country is below the poverty level. Out of 75 districts 57 districts are food deficit areas. The population growth is 2.4 percent and productivity is 2.2 percent so far. Most of the people fall in the marginal group from Terai mid hills and high hills. Therefore IPM concept of its different modalities could be refereed for the above categories of farmers. Priority need to be given in organic & botanical pesticides, biological, physical & cultural control method and off course, judicious and wise use of chemical, subsequently awareness of local knowledge plays a vital role. Diversity and inaccessibility makes difficult to work in Nepal. However own national policy may not be appropriate to whole country, so role to be played importance of NGO / INGOs will be more to raise the rice growing area of backward society of Nepal. World Education and CARE-Nepal would like to build on their experience with non formal education women empowerment, PVS (Participatory Variety Selection) program, Agroforestry as well as huge networking has been established with local partnering NGOs.

More than eighty percent people and especially more than ninety two percent women are involve in agriculture. However, the production and productivity of agriculture is not being able to fulfil the national demand. Haphazardly use of pesticides in illiterate community, unbalanced use of fertiliser and lack of dissemination of improved varieties is the main cause of less productivity. Most of the farmers could not afford the expensive pesticides and fertilisers. Country has to depend on those from other countries.

The community IPM program with Farmers Field Schools has the potential to reduce the dependency of harmful chemicals and to increase the productivity of the land.

Annexation 16

Responsible Persons:

IPM trained team of World Education and CARE-Nepal

Collaborating Agencies:

District line agencies, GO (National IPM Programme), local NGOs and Farmers groups.

Purpose:

Increase the production and productivity and reduce dependency to pesticides through adoption of IPM approach by farmers.

Methodologies:

There are different bodies like GO, INGOs, NGOs and People's Organisations (PO) all are responsible for farmer empowerment. Both World Education and CARE Nepal do work in partnership with NGOs and POs. They are being involved in implementation of their activities for farmer empowerment through community organisation, saving and credit program, literacy program, agriculture and other activities. However, the IPM program will be tied up with other activities through Local level organisations, IPM focussed projects can be proposed and started on the basis of experiences and lessons learned.

To mobilise the local resources, women focus program and disadvantaged group to involved. Basic TOT will be provided to their group. Tied up will be done with Village Development Committees (VDC) and District Development Committees (DDC) Chief District Offices (CDO) will be the main stakeholder among the intermediates.

Expected Output:

1. A study will be made to know the prospects of IPM implementation in rice crop.
2. Identify interested POs to carry out IPM program
3. Identify and train farmer group leaders for FFS
4. Run farmer field school through POs
5. Prepare documentation to develop strong monitoring and evaluation base.
6. Carry out follow up programmes for trained farmers.

Activities:

- 1.1 Sharing about IPM training, its importance and scope with project staff in meeting of concerned organizations

Annexation 16

- 1.2 Sharing of tentative ideas to implement IPM program with project staff and senior to collect feedback and program senses.
- 1.3 Sharing and discussion will be made with line agencies, POs, leader farmers about the various aspects of IPM
- 2.1 Field visit and assessment of POs will be done
- 2.2 A survey will be done to collect different related field, socio-economic and other information
- 2.3 Concerned DADO will be contacted and discussed about district agriculture related problems and possible solution measures.
- 2.4 Develop co-ordination and linkage between DADO
- 2.5 Develop linkage and co-ordination among the concerned agencies and develop MOU (memorandum of understanding)
- 3.1 Develop site and participants selection criteria
- 3.2 Selection of farmers (literacy graduates) and other groups for training.
- 3.3 Selection of related NGOs' fields staff and NFE facilitators for TOT.
- 3.4 Design curriculum/ field guide for training in collaboration with PPD/FAO.
- 3.5 Develop different IPM materials for post-literate groups.
- 3.6 Conduct of training in collaboration and in accordance to FAO norms.
- 4.1 Discuss about various trials against identified problems and IPM principles
- 4.2 Set trials in farmers field by themselves
- 4.3 Organise exchange visit and excursion to other FFS
- 4.4 Conduct regular co-ordination meeting to develop linkage and understanding and avoid program duplication
- 4.5 Recognise capable group to impart IPM activities
- 4.6 Support those groups for IPM implementation conduct group assessment to identify support areas of those groups.
- 5.1 Encourage and support POs to document each and every findings, experience and lessons learned.
- 5.2 Documentation of the approach, findings, experiences and lesson learned.
- 6.1 Conduction of follow up training in collaboration and according to FAO norms for leader farmer, LNGO field staffs and NFE facilitators.