Crop Protection Programme

Promoting adoption of integrated pest management in vegetable production

R8417 (ZA0649)

FINAL TECHNICAL REPORT

1 April 2005 - 31 January 2006

Hans Dobson

Natural Resources Institute

FTR completed Jan 27th 2006

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1. Project summary

TITLE OF PROJECT:	Promoting adoption of integrated pest management in vegetable production.
REF NUMBERS:	ZA0059 R8341
PROJECT LEADER:	Hans Dobson
RNRRS PROGRAMME:	Crop Protection Programme
PROGRAMME MANAGER:	Dr Frances Kimmins (NR International)
SUB-CONTRACTOR:	The Real IPM Company (Kenya)
CPP PRODUCTION SYSTEM:	Peri-urban
CPP PROGRAMME PURPOSE:	Benefits for poor people generated by application of new knowledge on crop protection to peri-urban production systems
COMMODITY BASE:	Vegetables
BENEFICIARIES:	Small-holder horticultural farmers
TARGET INSTITUTIONS:	FPEAK, HCDA, export companies
GEOGRAPHIC FOCUS:	Eastern Africa
START DATE:	1 April 2005
FINISH DATE:	31 January 2006[1]
COST:	
One year extension	£36958
Add on 1[2]	£9580
Add on 2[3]	£6100
TOTAL COST[4]:	**£52538**

Notes

1. The final activity, that is a launch of the training materials through industry channels, will take place in February 2006, with the agreement of the Programme Manager. It is described within this report but a supplementary report on this dissemination funding (ZA0733) will be submitted before the end of February 2006
2. This addition was to fund preparation and distribution of calendars (printing costs funded by CTA)
3. This addition (ZA0733) to promote the training materials produced during this one-year extension year to ensure that the training resources could reach an extended number of beneficiaries in all sectors.
4. In addition to this support from the Crop Production programme, funds were received from CTA for printing the pest management calendars, an additional output produced by the project

2. Executive summary

This project, led by NRI and partnered by the Real IPM Company, built on work carried out during the ten years of the Department for International Development's Crop Protection Programme. Many projects had generated and amassed information that could help smallholder vegetable farmers to improve the way they reduced damage from pests and diseases. This knowledge and technology needed to be made more available to the growers and the people who advise them and this was the thrust of the main phase of the project, reported in the previous Final Technical Report, a training procedure was piloted based on a manual developed by the project. Sixteen trainers were trained and issued with materials developed by the project that gave them the knowledge, skillsl and confidence to enable them to become accomplished trainers. These sixteen trainers went on to carry out their own series of courses in which they trained farmers. Although we had reached and trained over 500 farmers using this combination of materials and multiplication technique during the main phase of the project, we felt that much more could and should be done. The vast majority of farmers in Kenya and the region still had little or no access to information at a time when pest management needed to change quickly.

During the final extension year to which this report refers, new ways were developed to increase the reach of training using the concept of 'Farmer Trainers' (growers who could pass on information to their neighbours and fellow producers). We also needed to address some of the needs identified by the trainers from phase 1, that is for more materials that farmers could use to reinforce the concept of an integrated approach to production and pest management. During this period we adapted the existing training programme and by working with selected trainers from the earlier part of the project, piloted the creation of a course for 'Farmer Trainers'.

Further tailored written information was also produced to disseminate available IPM techniques in vegetable production:

1. Farmers Pocket Book of Integrated Pest Management for Vegetable Growers (as a key tool for use and issue by the Farmer Trainers). It's 100 pages provide information on growing healthy crops without using unnecessary chemical sprays. The book was designed so that it can be reproduced easily and cheaply. It is printed in black and white and all illustrations are line drawings, so that when the staples are taken out, A4 photocopies can be made, then the copies stapled together into a new booklet. In this way each trainer can multiply the written information as required.

2. Set of Field Identification Cards with colour pictures that help with identification of pests and diseases in the field.

3. Calendar of Vegetable Production and Integrated Pest Management to convey serious messages in cartoon format. Because the budget from the Programme would not extend to the cost of printing calendars, CTA agreed to be joint sponsors of the calendars.

Appendices 1 to 3 in the electronic version of this report contain PDF files of the three publications mentioned above.

3. Background

Vegetable production constitutes a powerful component of the livelihood strategies of poor farmers, providing revenues and jobs in developing countries while improving general nutrition. Often vegetable production is constrained by the negative impact of pests and diseases, low yield and quality of crops, and hazards resulting from excessive or inappropriate use of pesticides. A clear need and demand for adoption of alternative and effective pro-poor sustainable pest management strategies led to the creation of a project based in Kenya (ZA0599, R8341) that encapsulated many beneficial strategies developed over the last ten years by a number of DFID/CPP-funded research projects.

In order to make sure that the developmental impact of the research was realized, the knowledge, skills and improved methods have being developed into a format for widespread adoption within the earlier part of the project, in the form of a training programme, manual and resource materials which incorporate the key vegetable IPM technologies.

This project, led by NRI and partnered by the Real IPM Company, built on work carried out during the fifteen years of the Department for International Development's Crop Protection Programme. Many projects had generated and amassed information that could help smallholder vegetable farmers to improve the way they reduced damage from pests and diseases. This knowledge and technology needed to be made available to the growers and the people who advise them. During the main phase of the project, reported in the previous Final Technical Report, a training procedure was piloted based on a manual developed by the project. Sixteen trainers were trained and issued with materials developed by the project that gave them the knowledge, skills and confidence to enable them to become accomplished trainers. These sixteen trainers went on to carry out their own series of courses in which they trained farmers, and then reported back to provide valuable feedback on the process.

Although in the previous three years we had reached and trained over 500 farmers using this combination of materials and multiplication technique during the main phase of the project, it was decided to research the inclusion of an additional layer – the Farmer Trainers – as an additional multiplier in the process. Additional dissemination materials were also developed In order to address some of the needs identified by the trainers from phase 1 for more materials that farmers could use to reinforce the concept of an integrated approach to pest management.

4. Project purpose

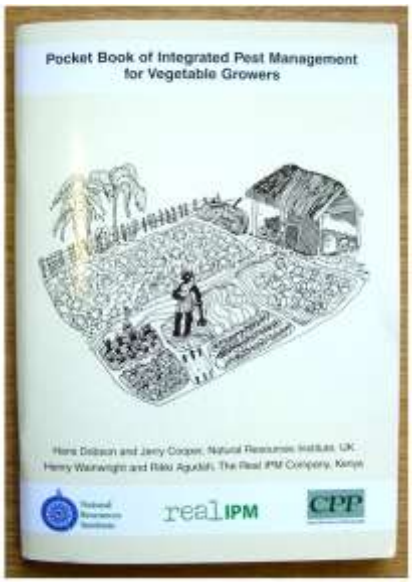
Promotion of pro-poor strategies to reduce impact of key pests and diseases, improve yield and reduce pesticide hazards in peri-urban systems. The aims of the project were to develop and promote improved methods for conveying information to farmers about control of pests and diseases that affect the quality and production levels of vegetables in Kenya.

5. Activities and outputs

During the final extension year to which this report refers, ways were developed to increase the reach of training by using farmers as trainers. We also addressed some of the needs identified by the trainers from phase 1, for more materials that farmers could use to reinforce the concept of an integrated approach to pest management. This was done by adapting the training programme and piloting the deployment of 'Farmer Trainers' (growers who could pass on information to their neighbours and fellow producers). To do this, selected Trainers from the earlier part of the project were invited to a workshop to develop course materials (session plans and approaches) then each Trainer carried out a course to train Farmer Trainers.

Additional printed training materials were produced that were tailored for farmers and people who train them. Primarily conveying the IPM techniques in vegetable production, the content was slightly expanded to encompass some food safety and good agricultural practice messages, at the suggestion of stakeholders in the horticulture industry.

The Pocket Book of Integrated Pest Management for Vegetable Growers was a core output. Written, printed and issued to the Farmer Trainers, its 100 pages provide information on growing healthy crops without using too much chemical pesticide. If pesticides need to be used, advice and tips are given on choosing pesticides and using them safely and efficiently. Short texts and specially commissioned illustrations are used to summarise the traditional and newer ways to grow crops profitably, and the ways that pests can be controlled safely.



The book was designed so that it can be reproduced easily and cheaply. It is printed in black and white and all illustrations are line drawings, so when the staples are taken out, A4 photocopies can be made, and then stapled together into a new booklet. In this way each trainer can multiply the book as required.

Fig 1. The cover of the Pocket Book

The second training publication was a set of Field Identification Cards with colour pictures that help with identification of pests and diseases in the field.

The third was a Calendar of Vegetable Production and Integrated Pest Management to convey important messages in light-hearted cartoon format. Because the budget from the Programme would not extend to the quite expensive cost of printing calendars, CTA were approached and agreed to be joint sponsors of the calendars.

Appendices 1 to 3 in the electronic version of this report contain PDF files of the three publications mentioned above.

Output 1. Production of Vegetable IPM Farmer Pocket Book

This involved:

a. Discussing with our team of trainers and other stakeholders in Kenya, the needs of growers in the region
b. Reviewing available IPM literature and training publications in order to distil the essential knowledge and skills for transfer to farmers.
c. Drafting of Vegetable IPM Farmer Pocket Book texts, using simple language, wherever possible without jargon.
d. Commissioning or collecting suitable monochrome line art to illustrate the messages being presented
e. Compiling and laying out the material
f. Liaising with printers to proof read and correct the several drafts before signing off for printing

Achievements and comments:

- The time needed to prepare and produce the book exceeded that expected
- The planned 50 pages was expanded to 100 to cover a wider range of issues
- The original print run of 500 was going to be insufficient. By negotiation with the Kenya-based printers we doubled the production to 1000 copies at no additional cost to the Programme
- Discussions with trainers and feedback from trainees indicated that the preferred language was English for technical literature. The book was therefore not translated into Swahili as originally planned.
- The pocket book was produced and issued to Farmer Trainers. It proved to be popular and comments indicated that it was useful. One comment was

"***wonderful with their easy to understand cartoons which speak volumes!"***

Output 2. Production of IPM identification cards.

This involved:

- Selection of pests, diseases, natural enemies and weeds for inclusion in the card sets chosen in consultation with partners in country and with participants at the forthcoming Instructor Training Courses organised under the parent project.
- Assembly or acquisition (by photographing or purchase from photo libraries) of images not currently owned by project partners.
- Compiling and laying out the material
- Liaising with printers to proof read and correct before signing off for production

Fig 2 (left) The cover of the NRI Field Identification card set

Achievements and comments :

- 1000 sets of Field Identification Cards were prepared in the form of a flip booklet
- The original idea was to produce playing cards, but this was changed on the advice of our local trainers for socio-cultural reasons.
- The FID cards were issued to our team of trainers and Farmer Trainers
- Demand is high. Feedback was that they were liked and were useful.

Output 3. Farmer Trainer Guidance Pamphlet and execution of courses.

This involved:

a. Having a workshop with our group of trainers to identify the key messages and activities for inclusion in the programme of a Farmer to Farmer training course.
b. Training five of our trainers who volunteered to carry out training of farmers to be Farmer Trainers
c. Preparation of training notes and programme

The trainers carryied out individual courses using project materials. Each trained six to eight farmers who wished to become Farmer Trainers. Brief reports on these courses were prepared by the trainers, see below.

Achievements and comments:

- The trainers themselves drafted the Farmer Trainer session summaries and session plans, which were edited by project staff and issued as a supplement to the existing training manual (entitled Guidance Pamphlet for Farmer Trainers – see appendix 2)
- Each trainer succeeded in giving a train the trainer course to farmers who wished to become Farmer Trainers.
- Each trainer wrote a short report on their training of the farmers to be Farmer Trainers.
- Some Farmer Trainers then felt confident to carry out further training, see below

Taken from report by Kibe, one of the project trainers, after he carried out training of Farmer Trainers:

"*This was a new concept to them in that they are to become their peer's trainers and actually they were very excited about it. They are used to outside trainers coming to them for trainings. IPM to most of them was new in that they did not know how some living organisms especially insects can be useful to them (farmer's friends). The coloured pictures for insect pests, diseases and farmers friends were very useful for identification since these are organisms they had seen at one time or another in their day to day lives. The hand book contained most of the materials that are required for*

the audits that they undergo from time to time hence they really appreciated the book."

Comments from farmers:
Many felt sufficiently knowledgeable after the short ToT course;
"*I am very pleased in learning and be trained to understand and train others*"

Others felt that they still needed further training; *"…..so that we can pass it to others"*

Output 4. Pilot Farmer Trainer course and materials - compiling farmer feedback

This involved:

a. Each of the five Trainers giving a course (Farmer Trainer course)
b. Reports being prepared by trainers, summarised reaction to, and feedback on, the Farmer Trainer course (see appendix 6)
c. Reports being prepared by trainers, summarised reaction to, and feedback on, the training materials (calendar, Farmer Pocket Book and Field ID cards)

Achievements and comments:

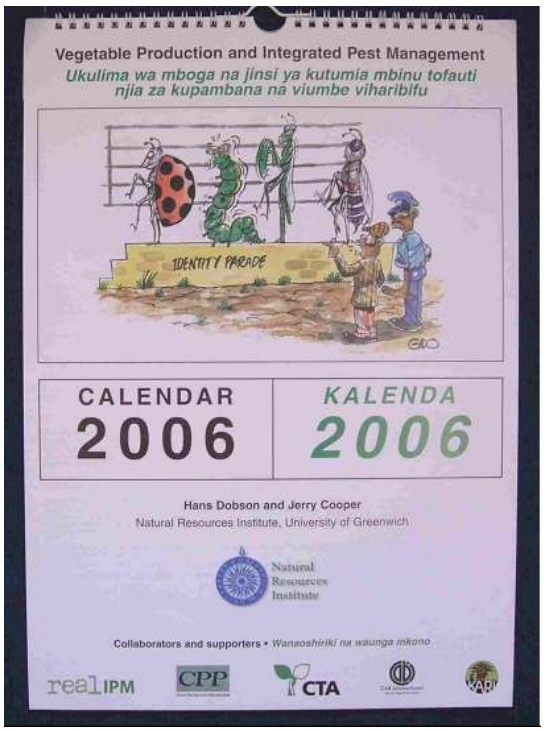
- From the farmers' evaluation results, the topics which were liked and understood were: Field recognition of pests, diseases and farmers' friends, Benefits of scouting, Record keeping, Biological control
- Lessons on chemical control and spray calibration seem not to have been as well understood by some farmers. This shows that more contact time is needed. The subject of how to spray in an efficient and safe way, using the correct dose really requires that people do mock calibration exercises to convert the theory into practice.

A one day review meeting is proposed in March 2006 by which time the farmers themselves will have trained their group members. By this time they should be better familiarized with the training resources and be able to itemise remaining challenges and the need for further materials etc to overcome encountered difficulties. This meeting will take place after the end of the project and should develop the type of feedback that helped to define the activities during the previous phases of the project.

Supplementary outputs. Dissemination add-ons supported by CPP and CTA

During the year, two applications for additional support were approved (by the Programme Manager and by CTA) see below.

1. Co-funding from CTA to print calendars



In addition to the support from the Crop Production Programme for the activities described in this report, the Project Leader was successful in obtaining funds from Technical Centre for Agricultural and Rural Cooperation (CTA) for printing the pest management calendars that were produced by the project team. Their contribution paid for printing costs of the 7000 calendars in English (6000) and French (1000), most of which have now been distributed (see appendix 5 for distribution list). This calendar is designed to be a multipurpose tool. It works as a calendar for the first year, but the bottom half with dates can be cut off at the end of the year to leave an A4 flip book of IPM messages, for use by Trainers and Farmer Trainers in years to come.

Fig 3 The cover of the 2006 calendar (English/Swahili version)

2. Distribution of calendars

The first CPP add-on was to fund preparation and international distribution of calendars (Calendar of Vegetable Production and Integrated Pest Management). Preparation work for the calendars, including themes for the commissioned cartoons, was done by the project team. (Printing costs were funded by CTA, see 1 above). The CPP then agreed to fund national and international distribution of the calendars. Apart from the copies delivered to CPP, these were given out to stakeholders in Kenya or sent by airmail to key agricultural contacts in the public, private or NGO sector in Africa and Asia. The list of recipients of is in appendix 1

3. Launch of additional training materials (ZA0733)

The second CPP add-on was to promote the published training materials produced during this one year extension year. This involved publicity for the project/programme and was an opportunity to spread the word on the printed resources to an extended number of stakeholders and potential beneficiaries in East Africa. The main activity to publicise the project outputs is a launch in Kenya of the Training Manual, the IPM calendars, the IPM Pocket Book for farmers and the Field Identification cards (pests, diseases and natural enemies).

The launch was held in the afternoon at the Landmark Hotel in Westlands, Nairobi at an event hosted by the Fresh Produce Exporters Association of Kenya (FPEAK) on 22 February (somewhat after completion of this report, with the agreement of the

Programme Manager). It provided an opportunity to describe some of the CPP achievements in front of key stakeholders from the industry, DFID regional office, KARI and others (yet to be finalised). At this event the Pocket Book of Integrated Pest Management for Vegetable Growers was released.

A supplementary appended report will be submitted to the Programme Management team before the end of February 2006. It will have a resume of the meeting, a list of attendees, photographs and details of any media coverage.

6. Contribution of Outputs to developmental impact

The project goal was to develop dissemination materials, courses and methods to promote improved methods for the control of pests and diseases affecting the quality and production levels of vegetables in Kenya, both for domestic and export markets (DFID supports long-term programmes to help tackle the underlying causes of poverty, and horticultural farming can help to do this provided that it is done in a way which does not threaten the future).

The planned outputs were achieved or exceeded. The range and print runs of printed materials exceeded by a factor of two those in the contract. By obtaining additional support from CTA to print 7000 calendars (6000 in English/Swahili and 1000 in French) the team were able to add value to the project and spread some of the information (via distribution of the calendar) to all parts of the world. More crucial to the project, calendars became part of the training material portfolio generated for use in the region.

By encouraging adoption of IPM and reduced reliance purely on pesticides, the project has contributed to the information and capacity to respond to the increasing number of food safety, human safety and environmental protection measures that are increasingly affecting growers. This has helped the horticultural industry - already vitally important to the region in providing food, employment and foreign exchange - since one of the limiting factors in this industry is the ability to control pests safely and sustainably.

While the 500 or so farmers reached in the first part of the project are only a small proportion of the production base that consists of many thousands, the training of Farmer Trainers in this additional year have been shown to help the information to spread outwards from farmer to farmer.

The training materials – Training Manual from phase 1, and publications from this additional year (Pocket Book of Integrated Pest management for Vegetable Growers, Field Identification Cards and Calendar of Vegetable Production and Integrated Pest Management) will be major resources in the longer term. The Pocket Books can be photocopied when further numbers are needed, and at the end of the year the calendar can be used as a visual aid for training – the bottom half showing the dates can be cut off to produce an A4 flip chart of IPM messages.

The project has developed a system to educate large numbers of growers and stimulate production of fresh produce in more sustainable and market compliant way. In doing so it has contributed to the wider objective, that is:
'*Promotion of pro-poor strategies to reduce impact of key pests and diseases, improve yield and reduce pesticide hazards in peri-urban systems',*

Additionally the project outputs, in stimulating horticulture, align with five of the eight Millenium Development Goals agreed by experts from the United Nations Secretariat, the IMF, OECD and the World Bank. The knowledge and information disseminated by the project will help to *improve health by better nutrition* and *empower women* who wish to grow vegetables (Goals 5 and 3 respectively). More specifically it will help in particular with goals 1, 7 and 8 (below) by providing jobs that reduce rural poverty and promoting international trade partnerships in a way that allows horticulture to go forward with minimal environmental damage -Goal 1, *Eradicate extreme poverty and hunger*. Goal 7, *Ensure environmental sustainability*. Goal 8, *Develop a global partnership for development*.

Future prospects

This one year project extension to the original three year project has been productive. We were able to spread some of the knowledge generated by the Crop Protection Programme and this will continue. But it would be a mistake to imagine that the work to improve horticulture is finished. While we believe that we have achieved the objectives laid out in the project, and documented many findings relating to the process of dissemination, much more still needs to be done to address the needs of farmers in Kenya and elsewhere. It is our hope that the work can be taken forward into the future to increase the range of training aids, expand the numerical and geographical reach of the training and help the people of the region to achieve social and financial development.

Hans Dobson, Natural Resources Institute,
Project Leader
26 January 2006

7. Appendices

1. List of calendar recipients (Real list and Postal list)
2. Guidance Pamphlet for Farmer Trainers

Appendix 1 List of people and organisations in Kenya receiving calendars, Field ID Cards and Pocket Books

	Name	Location	Place	Contact	Calendar	Pocket book	ID Card
1.	CABI ARC	ICRAF		Dr Sarah Simons	1000	1	1
2.	Farm Africa	Amref bldg	Langata rd		50	0	0
3.	Myres Exports	Langata shopping	Langata rd		15	2	
4.	Sunfresh	Langata shopping	Langata rd		5	2	
5.	Rockerfeller Foundation	International Hse	Nbi town		50	0	0
6.	Kenya Gatsby Trust	ACK Garden hse - Opp Fairview	Ngong Rd	Jane	50	0	0
7.	Kephis	Karen	Ngong Rd	Dr Kedere	25	0	0
8.	Technoserve	Scleter	Parklands	Henry	10	0	0
9.	Kevin Billing	Scleter	Parklands		50	0	0
10.	Horticulture Department	JKUAT	Thika		10	0	0
11.	Plan International		Thika		50	0	0
12.	Vertfresh			Rikki	50	0	0
13.	Sunripe	JKIA	JKIA	Shah	50	20	0
14.	Homegrown	JKIA	JKIA	Simeoni	50	2	0

15.	EAGA	JKIA	JKIA	Vijay Kumar	50	2	0
16.	Ukilima	JKIA	Schenker	James Lomax	15	2	0
17.	Vegpro	JKIA	JKIA	George Kyalo	50	2	0
18.	Wamu Investments	JKIA	JKIA	Muriithi	20	2	0
19.	Woni	JKIA	JKIA		20	2	0
20.	HCDA	JKIA	JKIA	MD	150	20	0
21.	Indu farms	EPZ - Mbsa rd	Mbsa rd	Chris/Benard	50	2	0
22.	Aficert	Vision Plaza	Mbsa rd	Ruth Nyaga	10	2	0
23.	Kenya Highlands seeds	Libra Hse	Mbsa rd	Ian Allen	5	2	0
24.	Regina seeds	MPPS Bld	Mbsa rd	Peter Francombe	10	2	0
25.	ICIPE	Tka rd	Tka rd	Bernard Lohr	10	2	0
26.	USAID	Tka rd	Tka rd	Dr Walter	5	2	0
27.	Kilimo Hse	Upperhill	Upperhill	Dr Songa	150	5	0
28.	DFID	BHC	Upperhill	John Hansell/Rachel Lambert	12	4	0
29.	BDS Kenya	Bhnd sarit cntr	W/lds	David Knopp	50	2	0
30.	FPEAK	Bhnd sarit cntr	W/lds	Siciliy kariuki	5	2	0

31.	PCPB		W/lds	Paul Ngarya	20	5	0
32.	Regina	Trainer	Thika		125	125	125
33.	SACDEP	Trainer	Thika	Wilson	125	125	125
34.	World Vision	Trainer	Thika	Bernard	125	125	125
35.	Hygrotech	Trainer	NVS	George	125	125	125
36.	Kibe	Trainer			125	125	125

Appendix 1 Contd. International distribution list for 2006 IPM calendars

Calendars were posted in early December 2005 by airmail. Note that some people received multiple copies (the PIP, FAO etc)

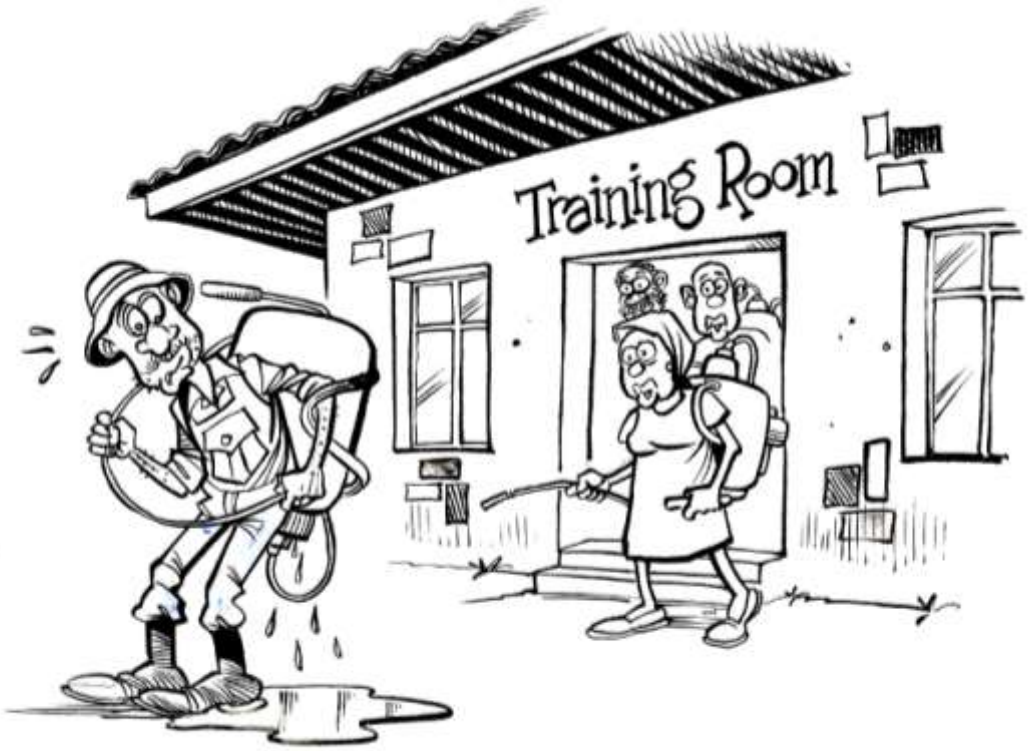
- M Guy Stinglehamber (5 English, 5 French) , Pesticides Initiative Programme
- Mr T Bals and colleagues (3), Micron Sprayers Ltd
- Professor Wang Qiang, Ru ShuiJiang and Chen Xiao Yan ,Inst. of Plant Protection
- Jan Fongers, Plant Sciences Expertise Group, Wageningen
- Drs Kechav and Sandiya Kranthi
- David Lyon, Ex NRI
- Dr Deepak R Jadhav ,Scientist, ICRISAT
- Dr Suruli Velu, Central Institute for Cotton Research
- Dr M L Chadha, Director, AVRDC
- Marie Paule Finn
- Tafadzwa Sibanda, PPRI, DRSS
- Rokeya Begum Shafali, Executive Director, AID COMILLA
- Director. CIRAD
- Dr Bill Taylor (3), Hardi
- Dr David Smith, Scott Wilson
- Drs Clive Elliot and Keith Cressman, Emergency Centre for Locust Operations, FAO
- Theodor.friedrich, FAO (5 English and 5 French)
- Keith Jones (3 English, 2 French), CropLife International
- James Ssemwanga, SSEMWANGA GROUP
- Jill Lenne
- Dr Joginder Singh Rasi Seeds (P) Ltd
- Bob Kowalski, Centre for International Development and Training
- Paul Sigombe, Uganda
- Stephanie Williamson, PAN UK
- Lucien Manga, WHO
- Colleen Crawford Cousins
- Sietse van der Werff, Common Fund for Commodities
- Director, USAID
- Uthai Ketunuti, Biological control section, Department of Agriculture
- Don Johnstone
- Andrew Bennett, Syngenta Foundation for Sustainable Agriculture
- Bob Aston
- Fuad Bahakim, Head of Locust Control, Yemen
- John Bahana, International Red Locust Control Organisation
- British High Commissioner, Nairobi
- Donald Coppen
- Andrew Jones, Deepblue
- John Lowe, Centre for International Development and Training
- Ludwig Mettermeier, Syngenta
- Richard Brown, Syngenta
- Julie Howarth, Pesticide Safety Directorate
- Mguni, Zim
- Phil symmons
- Pierre Van de Vaeren
- John Sutherland
- Colin Tingle
- Dr FPM Kasanga, DALDO, Kongwa District, PO Box 125 Kongwa, Tz
- Benjamin Manento, , DALDO,

- Horace Mhando, DALDO
- Steven A Ruvuga, MVIWATA Cordinator,
- Paul Ackroyd, DFID Ethiopia
- John Winter, DFID Ghana
- Simon Bland, DFID Kenya
- Eamon Cassidy, DFID Mozambique
- William Kingsmill, DFID Nigeria
- Colin Kirk, DFID Rwanda
- Sue Wardell, DFID South Africa
- David Stanton, DFID Tanzania
- Erik Hawthorn, DFID Uganda
- John Barrett, DFID Zimbabwe
- Otto Moller, Rural Development Operations Manager, EC Delegation
- Mr.Amos TINCANI, The Delegate, Delegation of the European Commssion
- Dr. Johann Hesse , Delegation of the European Commission in Tanzania
- Adrianus KOETSENRUIJTER, The Delegate, Delegation of the E C
- Mr. Timothy CLARKE, The Delegate, EU
- Andreas Laggis, Head of Operations, European Commission
- Mr. Erhart . LOHER, Rural Development Counsellor
- Mr Remy Noe, PMA Coordinator
- Mr. David MACRAE, Delegate, EC Delegation in Rwanda
- Roger Wilson, DFID
- Richard Montgomery, Head of Office, DFID, Zambia
- Mr John Pwamang (Director) Chemical Control Management Centre, Ghana
- Principal Agricultural Officer (Farm Inputs), Malawi
- Optichem (Malawi) Ltd, Malawi
- ActionAid, Malawi
- The Director, Crop Protection Department, Bunda College of Agriculture, Malawi
- The Director, Chitedze Agricultural Research Station, Malawi
- The Director, Department of Crop Protection, Ministry of Agriculture and Irrigation, Malawi
- Country director, Farm Africa, Ethiopia
- The Director, CARE Bangladesh
- Dr N. Dasgupta, C/O Maxwell Stamp, Bangladesh
- Executive Vice Chairman, ACIAIM, Mozambique
- William Zirebwa, Quality Manager, Companhia do Vanduzi SARL, Fresh Produce Exports
- The Director, AREU, Mauritius
- Tsegaye Abebe , Ethiopia Horticulture Producers and Exporters Association (EHPEA)
- Ed Havis, The Lodge House
- Katende, Hortexa, Uganda
- Jimmy Kawaye, Deputy Programme Manager, DFID (Malawi)
- Roshan Lyman, Economics and Trade Adviser, European Union, Sri Lanka
- Vernon Copeland, Programme Manager, European Union, Jakarta 10220
- Dr M.L. Chadha, Director, The World Vegetable Centre, AVRDC Tanzania
- Dr Dyno Keatinge, Deputy Director General –Research, ICRISAT
- Chetan Agarwal, Winrock International India,
- Yash Shethia, Foundation for Ecological Security, India
- Mwendya Augustine, Chief Executive Secretary, Uganda National Farmers Federation,
- Warwick Thompson, Programme Coordiantion Unit, Kampala
- Dave Moore , CABI
- Sean Moore ,Citrus Research International, SOUTH AFRICA
- Simon Gowan, Agriculture Department, Reading University
- Roma L Gwynn, Biorationale, UK
- Judy Pell, Rothamsted Research, Harpenden
- Dr Wilfred Mushobozi, Pest Control services, Tanzania

- Mr Uthai Ketunuti, Biocontrol Section, Department of Agriculture, Thailand
- Dr Flavio Moscardi, Embrapa, Brazil
- Dr Ken Wilson, Department of Biological Sciences, Lancaster University
- Dr Doreen Winstanley, Horticultural Research International
- Suresh Pande, ICRISAT
- Dr Colin Gutteridge, EMR, Kent
- Marc Sporleder, International Potato centre (CIP), Peru
- Richard Brown, Head of Stewardship, Syngenta Crop Protection
- Javier Franco, PROINPA, Bolivia
- Dr Tony Lumpkin, Director General, AVRDC Taiwan
- Dr Bert Uijtewaal, Nunhems B.V., The Netherlands
- Peter Gregory, PhD, Director for Biotech & International Professor of Plant Breeding
- Dr Tony Shelton, Professor Department of Entomology, Cornell University;
- James Marks, Department of Agriculture and Rural Development, Northern Ireland
- Rupert Haydock, NI-CO, 25-27 Franklin St, Belfast
- Dr.U.K.Bandyopadhyay, *entral Sericultural Research & Training Institute, India*
- Job david mika, ministry of agriculture., p.o. Box 73 dodoma tanzania
- Loveness j. Sakwera, district agric office, p.o. Box 26, singida tz
- Dr a.m. Mbwaga, ari-ilonga, box 33, kilosa, tz
- Alphonce katunzi, inades formation, tz, box 203, dodoma, tz
- Dr shekania bisanda, ministry of agriculture tanzania
- Ninatubu lema, ministry of agriculture tanzania
- Justice shekilango, mviwata, tanzania
- Dr nick lyimo, ari uyole, po box 400, mbeya, tanzania
- Lebai nsemwa, ari uyole, po box 400, mbeya, tanzania
- Dr betty gondwe, ari uyole, po box 400, mbeya, tanzania
- Sylvester mhoka, njombe district extension office, po box 76, njombe
- Tungeraza suitbert, lpri-mpwapwa, p.o. Box 202, mpwapwa, tz
- Joseph o. Ndege, Senior research officer, Dlco-ea, Kenya
- Gizachew assefa, Bird control (senior expert), Ehiopia
- Boaz n. Mtobesya, Senior agricultural officer, Arusha
- Moses muwanika mafabi, senior agricultural inspector, Entebbe
- Richard n. Magoma, Principal agricultural officer, Tanzania
- Roy n. Kithae, Plant protection officer, Nairobi
- Dr. Godfrey p. Chikwenhere, Chief research officer, PPRI, Zimbabwe
- Fatima mohamed elamin musa, Head of vertebrate pest section, PPD, Khartoum
- Mehari tesfayohannes, Senior information & forecasting officer, DLCOEA, Kenya
- Margaret kieser, Icosamp coordinator, South Africa
- Mr Frans Neuman, Mr Ruud Crul and Mr Simon Jasperse , NEDWORC Foundation
- Ms Omana T K., and Mr Sanath Kumar, Director, RASTA, India
- Dr Inder Abrol ,Centre for Advancement of Sustainable Agriculture (CASA), India
- Mr Suryatirtha Ray and Ms Jhuma Ghosh, CH-I (Change Initiatives) West Bengal
- Mr P V Satheesh, DDS – Deccan Development Society, India
- Dr. N. Nagaraju, Asistant Professor, Directorate of Extension, India
- Prof. V. Muniyappa, 46B, UAS Layout, India
- Dr Christopher Omongo, Namulonge Agric. and Animal Research Institute, Uganda
- Dr Anton Bua, Namulonge Agricultural and Animal Research Institute, Uganda
- Dr F. Opio, Director, Namulonge Agricultural and Animal Research Institute, Uganda
- Ulf Lindgren, VI Agroforestry Programme, Kenya
- Mrs Inviolate Dominick, VI Agroforrestry Project, Tanzania

Appendix 2. Guidance Pamphlet for Farmer Trainers

Guidance Pamphlet for Farmer Trainers



Hans Dobson and Jerry Cooper, Natural Resources Institute, UK
Henry Wainwright and Rikki Agudah, the Real IPM Company, Kenya
Regina Wacera Kabiru – Consultant, Kenya
George Kariuki – Hydrotech, Kenya
Wilson Mwangi Kimwea – SACDEP, Kenya
Bernard Nthiwa Mulei - World View, Kenya
Peter Kibe Waweru - Osho Chemicals, Kenya

November 2005

Introduction

This pamphlet is designed to help you deliver effective, enjoyable training.

It is part of a package of materials supplied to you, including:

- Pocket Book on Integrated Pest Management
- Field Identification Cards
- A Calendar for vegetable farmers

This pamphlet contains:

1. A suggested programme for a two-day course. This consists of 6 sessions each lasting 1.5 hours, covering some of the key topics
2. Guidance on how to use the training tools and deliver effective training
3. Session Summaries. These outline what you will do, what the trainees will be able to do at the end of the session (**objectives**) and what equipment, reference material and preparation is required.
4. Session Plans. These provide step by step guidance on how to deliver the session, including which visual aids and exercises to use and when.

Programme for 2 day Farmer course

Day 1

09.00 Assemble and introduction
Session 1: 09.30. ID of pests, diseases, Farmers' Friends from pictures.
Session 2: 11.30. Field recognition and scouting
13.00 Lunch
Session 3: 14.00. Non-chemical control
15.30 Review of the day

Day 2

Session 4: 09.30. Chemical control (including calibration and safe use)
Session 5: 11.30. Record keeping, traceability and Eurepgap
13.00 Lunch
Session 6: 14.00. Familiarisation with training materials and effective use
15.30 Wrap up discussions, certificates and close

How to deliver effective training

Some key points to remember are:

1. This course is most effective if it is held in a village setting, with crops nearby for the fieldwork. A preliminary visit is necessary to raise awareness of the course, make plans and give guidance on selection of participants. It is important to try to get a balance of men and women attending and also to take into account the differing ages and abilities of the farmers. The largest number of participants should be 16, otherwise some of them cannot get involved properly in the practical work.

2. The course should be **participatory** with farmers being allowed to take part – they have a lot of knowledge and experience to offer. However, sometimes farmers get it wrong and your job as a Farmer Trainer is to encourage farmers to change to better methods, without embarrassing them in front of their friends and neighbours. These participatory techniques include:

    - Asking farmers questions and answering their questions
    - Asking them to discuss something in groups and then they report back to everybody
    - Role plays where they act out particular situations
    - Field exercises where they learn and practice skills
    -

3. You should avoid long lectures – you must get the farmers **doing things** so that they will understand and remember them:

    - If I hear something, I forget it after a short time
    - If I see something, I remember it for longer, but I may not understand it
    - If I do something, I understand it and remember it for a long time

4. Evaluating the impact of your training is very important – if you don't check, you don't know whether you have wasted your time and theirs! Participatory techniques are good for continuously assessing whether farmers are understanding, but there are other ways at the end of the course. You could have a sort of quiz at the end where you test their **knowledge**, and you could ask them to demonstrate techniques to test their new **skills.**

5. The value of certificates should not be underestimated - farmers cherish them very much since this motivates them and reminds them that they are very useful citizens. Copies should be taken to the field with blanks for where the names can be filled in. The impact is greater if Administrative Leaders move from the town to the village to hand over these certificates.

Good luck and have fun……

How to use the training materials

Pocket Book on Integrated Pest Management

This is a short book summarising the main issues in integrated pest management, especially those relevant to small scale vegetable farmers. A copy should be given to each farmer you train. It can then be:

- a technical reference book
- a reminder of what you taught them
- a visual aid – you can say 'please look at page 45'
- a field guide for procedures such as calibration
- a guide to sources of further information

It is designed so that it can be copied easily - show the farmers that the staples can be taken out for photocopying.

Field Identification Cards

These have colour pictures of some of the main pests, diseases and farmers' friends in vegetable production. Names, descriptions and some control tips are given on the back of each card. There is no text on the front of the cards. This is so that they can be used in interactive exercises with farmers.

Some suggestions for how to use these cards are given below:

- They can be taken to the field to help identify organisms
- They can be used in identification quizzes in the classroom
- If the binding is taken off, they can be used in interactive exercises such as: sorting into pests, diseases and natural enemies; sorting into sucking and chewing pests, finding pairs of pests and natural enemies that feed on them
- Each farmer can be given a card at random and asked to give a short presentation on it (using information on the back if necessary)

Session summaries

These are one-page outlines of the aims and objectives of each session, as well as indicating what equipment, visual aids, preparation and time are required for the delivery of the session. They list the appropriate technical resource pages in the Pocket Book of IPM that trainers should refer to when preparing their sessions. Key points that should be emphasized during the session are indicated.

Session plans

These contain step-by-step instructions on how to organize and deliver each session. These plans will help Farmer Trainers to organize their sessions to cover the main points to a predetermined schedule, using participatory techniques to facilitate effective learning by the trainees.

Participatory training techniques

A good trainer will use a variety of participatory techniques in his/her training sessions. Again these are covered in more detail in the Training Skills section of this manual and in the Master Trainer's course. They are presented below as a quick reference for terminology used in the Session Plans on the following pages:

Technique	Description
Present	Lecturing to communicate new ideas and information. This method is essential, but should only be used for short periods and in conjunction with visual aids and question and answer (Q&A)
Question and answer (Q&A)	Questions should be 'open' – beginning with 'why, who, which, where etc' – since this stimulates a fuller answer than 'closed' questions – beginning with 'is there…, do you…? These only bring a yes or no answer. Answers can be built up as a list on the whiteboard or flipchart. Two main types of Q&A are listed next.
Q&A (everyone):	Question to all trainees, answered by a volunteer. Use for sharing knowledge, learning by deduction and warming up a session.
Q&A (individual)	Question to an individual trainee. Use for sharing knowledge, learning by deduction, and focusing minds, especially for those who are finding it difficult to concentrate or participate.
Buzz groups	This is when a pair or small group of trainees are asked to discuss a question or issue, then to present their findings to everyone. Useful for sharing knowledge within the group and developing presentation skills, peer reviewing and building confidence.
Demonstration	To present a technique by showing trainees how to do something.
Indoor exercise	An exercise in the classroom, either a desk exercise or a small practical exercise. Improves skills in problem solving and working with others. Done within groups or pairs of individuals.
Outdoor exercise	A practical exercise that is more easily done outside the classroom. Improves practical skills with equipment and techniques.
Field exercise	Putting knowledge and skills into practice in the field. Builds ability and confidence in practical techniques and working with others. Done within groups or pairs of individuals.
Guided discovery	Where trainees engage in an activity that leads them to discover knowledge or techniques. A powerful technique that helps trainees remember things well, but very time-consuming unless guided well.
Trainee presentation	Asking a trainee to prepare and present findings from classroom or field exercises. Consolidates and shares knowledge, and builds confidence.
Simulation	To simulate a real situation in the field, usually done on a computer.
Role play	e.g. nomad and Survey Officer. Humour retains interest and creates resonance with trainees' previous experiences and observation.

Training aids

Training aid	Description
Presentation surface (PS)	A presentation surface can be a blackboard, whiteboard, flipchart, or overhead projector transparency – in other words, any surface which the trainer can write or draw on for trainees to see. There are several different types of PS use – see the following four PS techniques.
PS list	Building up a bullet point list on the PS using trainee input from Q&A
PS table	Completing a PS table using trainee input from Q&A
PS sketch	Drawing a diagram or illustration on the PS
PS maths	Showing calculations from a worked example on the PS
Q&A	Question and answer (see following page)
OHT	Overhead transparency
Slide	Photographic slide presentation
PPP	Powerpoint presentation
Video	Video cassette tape presentation
Real materials	These are real items such as equipment, vegetation, insects or a publication which the trainees can examine

Tools in participatory training

Tool	Description
Energizers	Group activities that may not be directly linked to the technical subject matter. They can be useful to break the ice, help people get to know each other and can lift flagging interest or energy, especially after lunch. Humour breaks down barriers and important messages can be woven into the activities.
Trainee representative	It is useful to ask trainees to appoint a representative. The representative provides an anonymous and effective communication channel to course organizers/trainers for complaints and dissatisfactions amongst the trainees, or in the reverse direction.
Trainee evaluation	An anonymous questionnaire filled by trainees at the end of the course can be used to assess levels of satisfaction with all aspects of the course and to gather critical feedback on how it can be improved.
Certificates	These consolidate the feeling of achievement and satisfaction and demonstrate appreciation of trainees' efforts by the organizers. They help confidence and credibility among professional peers and next-level trainees, which in turn allows more effective and wider dissemination of survey and control messages. Make sure to circulate a list of names before the end of the course so that participants can check spelling. It is easy to change things at this stage, but difficult to change the certificates once they are printed.

FTS1	Session Summary	Duration
	Identification of Pests, Diseases & Farmers Friends	**1.0 hour**

Aim (what I plan to do):

- Teach recognition of key pests, diseases of vegetables and how to identify farmers' friends.

Objectives (what the farmers will be able to do at the end of the session)

- Identify the major pests of vegetables and the damage they cause
- Recognise the major diseases and pests of vegetables and identify the distinguishing characteristics that can be pointed out to farmers to help their recognition
- Recognise Farmers' Friends (natural enemies) and the benefits they bring to the farmer
- Describe the different types of lifecycle, life stages of pests and the relationship of these stages to crop damage

Key points:

- Pests can suck, chew, transmit diseases and cause damage in other ways such as fouling leaves or reducing market value
- Farmers' friends can be predators that eat pests, parasitoids that lay their eggs in or on pests, or pathogens that infect pests
- Farmers' Friends can help keep the pest numbers at acceptable levels
- Weeds can compete for nutrients and be alternative hosts for pests and diseases but can also help encourage farmers' friends
- Behavioural differences are an important part of recognition of natural enemies
- Diseases can be fungal, bacterial or viral
- Diseases can be transmitted by wind, rain splash, contaminated farm implements, seed, human contact, irrigation water

Equipment:

- Set of field ID cards of common diseases and pests of vegetables and Farmers' Friends

Preparation:

- Divide the class into two groups of four and let each have a set of field ID cards.

FTP1	Session Plan	Duration
	Identification of Pests, Diseases & Farmers Friends	**1.0 hour**

SECTION	TECHNIQUE AND CONTENT	AIDS
Introduction (5 mins)	**1. Q&A: (everyone)** Why do farmers have to identify the pests, diseases and farmers' fiends in their fields.	Set of flash cards
	2. Q&A (everyone): From the set of flash cards provided to your group, what living things can you recognize? (Divide these into pests, diseases and farmers friends.)	Set of flash cards
Core (45 mins)	**1. Present:** Explain that pests can damage the crop in different ways, chewing, sucking and transmitting diseases.	Set of flash cards and PS list
	2. Q&A (individual): What parts of the plant can be eaten by pests? How important are the different parts of the plant?	PS list and set of flash cards
	3. Present: This damage can be caused by different life stages of the pest – explain an example of complete metamorphosis and incomplete metamorphosis	PS drawing of bug and moth life cycles
	4. Q&A (individual): For the diseases mentioned earlier, how do they affect the plant and how are they spread? (Complete the list if information is missing)	Diseases flash cards
	5. Q&A (everyone): How can insects be beneficial to the farmer? Prompt for killing pests, pollinating. Can diseases and non-crop plants be beneficial too? Prompt for insect diseases and FF food source.	PS list
	6. Present: Farmers Friends can be predators that eat pests, parasitoids that lay their eggs in or on pests, or pathogens that infect pests and cause disease.	FF flash cards
Summary & Conclusion (10 mins)	**1. Q&A (individual) to check understanding:** • How can pests damage the crop (check arthopods, diseases and weeds) • Give an example of when crop damage is not important • What is the adult stage of a caterpillar • What is the adult stage of a small bug • What sorts of farmers friends are there and how do they kill pests • How can farmers' friends be encouraged? • What happens to natural enemies when boundary areas are preserved? • What is the effect of pesticide application? Prompt for discussion on non-selective and high toxicity levels of many pesticides, vulnerability of natural enemies vs pests	

	1. Present: (to summarize): There are many living things in the crop, some of them harmful to the crop and some of them helpful. Knowing which is which is the starting point for IPM systems.	
	2. Present (to lead into the next session): Now that we know a bit more about pests, diseases and farmers' friends, let us consider how to manage the numbers of these living things so that we can grow good quality produce at the lowest possible cost	

FTS3	Session Summary	Duration
	NON-CHEMICAL CONTROL	**2 hours**

Aim (what I plan to do)

Describe non-chemical methods of pest management and how they can be applied in the field.

Objectives (what the farmers will be able to do at the end of the session)

- List 5 cultural methods of managing pests
- Describe the main natural enemies found in the crop
- Explain how natural enemies can be encouraged and conserved

Key points:

- Encouraging natural enemies is achieved through establishing a conducive environment
- Cultural and biological methods of pest management should be employed in the farm whenever possible
- Cultural methods of pest management should be used as the first intervention.
- Natural enemies can be predators, parasitoids and pathogens

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Equipment:

Farmers' friends poster
Field ID cards
Gado cartoons

Preparation:

none

FTP3	Session Plan	Duration
	NON CHEMICAL METHODS	**2 hours**

SECTION	TECHNIQUE AND CONTENT	AIDS
Introduction (10 mins)	**1. Q&A (Individual**) ask questions about the different non-chemical methods of pest management practiced in the farms and their pros and cons	
Core (95 mins)	**1. Present;** cultural practices that can be used to manage pest .eg. crop rotation, resistant varieties, field hygiene, destruction of infected crop residue	
	2. Q&A (individual): ask what is a good crop rotation programme for a farm	
	3. Present: farmers friends can be predators that eat pests, parasitoids that lay eggs in or on pest or pathogens that infect pests and cause diseases,	Farmers friends poster Flash cards
	4. Pesent; insects have different stages in their lifecycle	
	5. Q&A (all) How can natural enemies be encouraged and conserved	
Summary & Conclusion (15 mins)	**1. Q&A (individual) to check understanding:** • What cultural practices can applied in field to control pest which farmers friends are found in the farms and what pests does each control • How can farmers friends be encouraged and conserved?	
	2. Present: (to summarize): pesticides have negative effects on the natural enemies but there are various ways that can be used to make the two work effectively.e.g. spot spraying , use of selective pesticides . By making use of the three methods of control we can produce crops at low cost.	

FTS4	Session Summary	Duration
	Chemical control and calibration	**2.5 hours**

Aim (what I plan to do):

Teach the role of chemical control in IPM, together with the basics of pesticide types, their safe use, and calibration of application equipment.

Objectives (what the farmers will be able to do at the end of the session)

- Explain that chemical control is one method among many - a last resort
- Choose chemicals according to the target pests.
- Choose and use the right protective clothing for filling/mixing and spraying
- Use safe and effective spraying techniques
- Select the right nozzles for different jobs.
- Calculate and adjust the spray volume + achieve the right rates in the field.
- Read and interpret pesticides labels
- Describe how to dispose of empty pesticide containers safely

Key Points:

- Different types of pesticides target different pests i.e. insecticides for insects, fungicides for fungal diseases and herbicides for weeds.
- Advantages/disadvantages of chemical control
- Dangers of exposure to chemicals
- Safe use of chemicals and protective clothing
- Interpretation of pesticide label crucial for right usage of pesticide
- Right spraying technique saves on cost and risk to humans/environment
- Different types of nozzles and their suitability for different jobs
- Correct volume and product rate are very important for efficacy and cost
- High volume not necessarily cost-effective, can be wasteful
- Safety clothing is a must when spraying
- Disposal of pesticide containers a major concern - environmental concerns

Equipment required:

- Knapsack sprayer, Set of protective clothing, different nozzles, Measuring jar, Bucket and water, Empty/dummy pesticide containers, A pesticide label, Pictograms

Preparation:

- A suitable area for calibration
- A growing crop or plant nearby for demonstrating the right spraying technique

FTP4	Session Plan	Duration
	Chemical control and calibration	**2 hours**

SECTION	TECHNIQUE AND CONTENT	AIDS
Introduction (10 mins)	**1. Q & A (individually).** Name different methods of controlling pests and diseases as covered in the previous session.	
Core (120 mins)	**1. Q & A (ALL).** What do we need to consider if we are to use chemicals pesticides? How should we make decisions? What are the advantages and disadvantages of using pesticides/chemicals? Highlight the disadvantages. Explain the consequences of ignorance e.g. risks, costs, insecticide targeting a disease? Lead a discussion on the choice of product. Explain how to interpret a pesticide label and decide how much pesticide to add to a sprayer.	Poster with insect pests & diseased plants.
	2. Q & A (ALL). What safety procedures should we consider when spraying? What to wear for which part of body? Head, face, eyes, hands, body, feet? What are the dangers associated with coming into contact with chemical pesticides. Highlight various methods in which we might get into contact with pesticides (exposure) and how to avoid them.	Overall Hat Gloves Goggles Covered boots Pictograms Pesticide label
	3. Q & A. what are the right spraying techniques? ▪ Target the pest/disease or the affected parts of the plant/crop. ▪ Explain the different parts of a sprayer and emphasize on the different types of nozzles for different jobs. Fan, cone and deflector nozzles. Also consider adjustable nozzles. ▪ Discuss the different types of nozzles and where they can be used, how to judge or good nozzle depending on drop size, pattern and flow rate. ▪ Explain how to maintain nozzles especially on cleaning clogged ones. Implication of using old or damaged nozzles with respect to flow rate and costs.	Lance of a sprayer Different nozzle types
	4. *Practical Exercise* Take the farmer trainers in an open field and try out different nozzles. Explain cones are mostly used with insecticides and fungicides while fans & deflector nozzles are used with herbicides.	- F an nozzle - c one nozzle - D

		eflector nozzle - A djustable nozzle Different sized cone nozzles
	5. Present The balance between drop size, volume rate and the coverage of crop with spray. Explain how to estimate volume rate.	
	6. Practical exercise One of the farmer trainers to carry out volume rate measurement on a 10x10m crop. Volume rate will depend on size of crop (and the business). Desired volume should range from 100lt – 300lt/ha. Excessive volume result in excessive doses of pesticides hence more residues and increased costs.	-Knapsack sprayer -Measuring tape -Water
Summary & Conclusion (15 mins)	**6. Q & A (Individual)** ▪ How do pests damage crops? Insects, fungi, nematodes? Give specific stages on the life cycle of insects when they cause damage and in which way. ▪ What is the effect of chemical application? ▪ Discuss on non-selective and high toxicity levels of pesticides. ▪ Vulnerability of natural enemies. ▪ What is the importance of selecting the right nozzle for a specific job? What are the environmental implications on disposal of empty containers? ▪ Which are the routes of entry of chemicals to the human body?	

FTS5	Session Summary	Duration
	Record keeping, EUREP-GAP, Traceability	**1.5 hours**

Aim (What i plan to do): Teach the three subtopics on Farm Records, EUREP-Gap and the traceability for farm produce.

Objectives (what the farmers will be able to do at the end of the session)

- Understand the importance of farm records in relation to EUREP-Gap requirements.
- Be aware and able to keep the basic farm records.
- Understand the most important EUREP-Gap requirements and their implications to the export market of fruits and vegetables.
- Be aware of the traceability requirement for farm produce and their overall benefit.

Key points:

- Appreciate the importance of farm records
- Identify the most important farm records and be in a position to keep them
- Appreciate EUREP-GAP requirements and their implication in the export market
- Identify the major requirements and be able come up with ways for adopting them
- Understand the traceability requirement and its importance to the smallholder farmer

Tools

- Flip charts and pens
- EUREP-GAP Manual
- Examples of farm records sheets for exercise

Preparation:

Identify the workshop venue and other logistical issues necessary for the training

FTP5	Session Plan	Duration
	Record keeping, EUREP-GAP, Traceability	**2 hours**

SECTION	TECHNIQUE AND CONTENT	AIDS
Introduction (10 mins)	**1 Present:** Farmers need to understand issues related to record keeping on farm activities, Eurep-gap and Traceability of farm produce in order to maintain or improve their access to increasing demanding national and export markets.	
	2 Q&A: Through question and answer session, explore the farmers' knowledge on the above subject.	Eurep-Gap manual
Core (60 mins)	**1.Q&A (all)** ▪ Discus the importance of farm records ▪ List the various categories of information that a farmer might need to include in his/her records	Exercise on farm records from the EUREP-GAP manual
	2. Buzz groups: What challenges are there relating to farm records and suggest ways to improve record keeping.	
	3. Present: Summarise EUREP-Gap requirements highlighting the critical areas required by the industry	EUREP-GAP manual
	4. Q&A: Have an open forum where farmers share out their experiences concerning Eurep-Gap	EUREP-GAP manual
	5. Present: Discuss the traceability requirement for farmers produce destined for export. (What is it, importance and implications).	EUREP-GAP manual
	6. Present: Open session, discuss general issues related to production and marketing of agricultural export commodities.	
Summary & Conclusion (15 mins)	1. **Q&A Session** aimed at assessing the understanding of the participants. ▪ What do you understand by the term farm records? ▪ Name some examples of farm records and types of information that you think are important. ▪ Why do you think smallholder farmers do not keep records and what can be done to improve this situation? ▪ What was your understanding of EUREP-Gap and is it different now? ▪ Mention some of the most important requirement, of average importance and the recommendations	

	▪ What's your general perspective on these requirements and your general honest opinion about there practicability? ▪ ***What is the benefit of the traceability of farm produce to smallholder farmer?*** ▪ In what ways will the implementation of the traceability requirement affect the functions of the producer?	
	2. **Present to conclude**: - Give an overview of the whole presentation covering the three subtopics. - Share out the benefits of adopting the requirements as early as possible.	

FTS6	Session Summary	Duration
	Familiarisation with materials and using them effectively	**1.5 hours**

Aim (what I plan to do):

- Raise the farmers awareness and appreciation of the support materials they have been given and guide them in how to use them effectively for their own good and the good of others in the community

Objectives (what the farmers will be able to do at the end of the session)

- Describe the main contents of the Pocket Book of IPM
- Find specific information in the Pocket Book
- Describe how to copy the Pocket Book
- Demonstrate how to use the Field ID cards
- From memory, list and explain the messages from four cartoons from the calendar
- Describe how to convert the calendar to an IPM trainers flip file at the end of the year.

Key Points:

- Explain that most books never get read because people do not know what useful information is in them.
- If farmers are familiar with the content, they will make use of the Pocket Book
- Unstaple the Pocket Book, but keep the staples safe while photocopying so that they can be reinserted in the holes afterwards
- The field ID cards are meant to be a quiz to help people remember what the organisms are. Don't give the answer straight away, give clues instead.
- There is a lot of material in the calendar for discussion and learning. Take time over each cartoon
- The bottom of calendar can be removed at the end of the year. This can be cut off, or folded and torn off.

Equipment required:

Pocket books, field ID cards, calendars for all + one cut down calendar

Preparation:

Cut the bottom half off all pages in one copy of the IPM calendar

FTP6	Session Plan	Duration
	Familiarisation with materials and using them effectively	**2 hours**

SECTION	TECHNIQUE AND CONTENT	AIDS
Introduction (10 mins)	**1. Present:** Resource material and publications are very useful in training since they help farmers remember the skills and information they have gained on the course. But to get the most out of them, the farmers need to be familiar with what is in them and how to use them.	
Core (60 mins)	**1. Exercise:** Ask the farmers to look through the Pocket Book of IPM for 5 minutes and tell them you are going to ask questions about its content.	
	2. Q&A (individual): Ask farmers to list 4 or 5 topics covered by the Pocket Book. Ask them if these topics are useful to them.	
	3. Present: Tell them that now that they know what it contains, they will know where to look for information. Also explain that they should share the Pocket Book with other farmers in their village and explain the contents to them. Explain to them that if other people want a copy, they can dismantle the Pocket Book and photocopy it. Show them how to take the staples out so that they are not damaged and can be replaced after copying.	
	4. Present: Remind them of how the Field ID cards were used in the training course. They should be used as a quiz – asking people to name and describe the organisms in the pictures, without telling them the information on the back. Later on, that information can be revealed. Also remind them that they can take the cards apart for sorting games, e.g. sorting into pests, friends, wet season problems, tomato problems etc. Point out that these cards can be used with their children, other family members and other farmers.	
	5. Q&A (all): Go through the calendar cartoons one by one and ask them to contribute their opinions on what the messages are.	
	6. Present: Describe how to cut the calendar part off to leave an IPM trainers flip file. Show the cut down calendar and discuss ways of using this in training other farmers.	
Summary & Conclusion (15 mins)	**Q&A (individual):** ▪ Name some of the sections in the Pocket Book ▪ How can it be copied ▪ How should the Field ID cards be used ▪ What are the advantages and disadvantages of taking	

	the binding off the cards ▪ Describe a cartoon from the calendar and explain its message to the group. ▪ How can the calendar be converted to a training tool at the end of the year.	
	2. Present to conclude Summarise the session. Tell farmers that they have a big responsibility. If the skills, information and printed materials remain only with them, the impact of the training will be small. If they share all of these with their families, friends and farming communities – and ask those to share it with others too – the impact will be huge.	