Kastom Gaden Association
Planting Materials Network, Department of Agriculture and Livestock, and PestNet

Linking Farmers to Plant Protection Network (Solomon Islands)

Project #1222 infoDev The World Bank

KGA/DAL/PestNet Workshop on Sweet Potato, Beans and Sliperi Kabis at Malathawa

Mission Report 4b
24-25 May 2004

Honiara & Fiji
July 2004
Introduction

This is the report of the fourth workshop under the PestNet/KGA/DAL collaboration to test how rural email can assist farmers in remote areas of Solomon Islands. Following PRAs in the project area in October 2003, Malathawa was selected by the Baetolau Farmers Network as the site of a sweet potato workshop. Malathawa is near the Project email station at Silolo, on the north coast of Malaita.

In an earlier workshop in November 2003, sweet potato was selected since it is an important crop in the region, and yields were reportedly low. Later, however, it was thought that the low yields were more likely caused by soil fertility and not by pests and diseases as was initially believed. Therefore, KGA, DAL and PestNet thought it might be more useful to look at sweet potato pests at the workshop, but at the same time include other crops. People from the village have been reporting pest problems on *sliperi kabis* (*Abelmoschus manihot*) and beans (*Vigna unguinulata sesquipedalis*), both of which are heavily attacked by insect pests to the extent that cultivation is difficult and in decline.

The aim of the workshop was for farmers to identify and prioritise sweet potato, bean and *sliperi kabis* pest problems and, together with KGA, DAL and PestNet, discuss options for control. Monitoring of the trials will be carried out by the KGA/PestNet Community Field Officer and the DAL Field Officer stationed at Malu’u, with regular updates sent to PestNet moderators by email and to others in the network.

The workshop was attended by 14 farmers, six of whom were women. Participants came from Malathawa and villages nearby. A list of participants is given in Annex 1 and the Workshop timetable in Annex 2.

Workshop activities

Opening remarks

The Workshop began with prayers by the DAL Field Officer, Malu’u, John Faleka. Chief Bollen officially welcomed both the participants and the resource persons to his village for the Workshop. Participants then introduced themselves followed by the resource persons. Ms Lilly Wame, DAL, Senior Field Officer, spoke about the aims of the Workshop and the Linking farmer project.

The workshop agenda is presented in Annex 2.

Defining the pest problems

The participants considered the crops with the most pest problems in their villages, and choose sweet potato, *sliperi kabis* and beans. Afterwards, they formed three groups to look at the problems in more detail.

**Group 1 sweet potato**, thought that pest problems were not significant. Mostly, they were associated with crop husbandry practices, such as field sanitation, right harvesting times, and planting seasons. It was clear that sweet potato grows well, but
the yields are relatively low and this was thought due to low soil fertility. The sweet potato varieties grown are 1) Dii, (2) Suca, 3) Bebeakwe, 4) Kaidai, 5) Koukou, (6) Ruavatu, 7) Kaotave, 8) Sweet Momole, and 9) Daonem Light. Suca and Bebeakwe were introduced in the last 10 years from other provinces.

**Group 2 beans (yard long and wing beans)**, are grown by many of the participants as a cash crop. Farmers harvest early to avoid pest attack, but find it difficult to obtain sufficient seed for planting. The group found that the major pest is the brown stink bug which makes holes in the fruits. A white caterpillar with a black head also attacks the beans. Staked beans were more affected than those grown unstaked. However, fruits of the latter do not grow straight, and because of this their market value is reduced.

**Group 3 sliperi kabis**, is the main vegetable in the area and throughout the country. However, farmers at Malathawa and nearby villages have stopped growing the cabbage because of severe infestation of pests. The group reported the following:

- A black beetle (*Nisotra* sp) eats the leaves,
- A caterpillar (*wawa*) eats the young shoots and folds the leaves,
- Two beetles (green and black) eat the leaves,
- Snails eat the roots,
- A small spider lays egg on the leaves,
- A slug (*waiwainoa*) crawls on the cabbage and leaves slime, and
- A scale insects heavily infest the stems.

A beetle (*Nisotra* sp.) and a caterpillar of a shoot borer (*Earias vittella*) were the main pests identified by the farmers. Group 1 thought *Earias* the main problem; Group 3, *Nisotra*; and Group 2 identified both as equally important (see Table). (Similar conclusions were made at the Guou'ulu workshop in January 2004).

<table>
<thead>
<tr>
<th>Questions</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>When does the problem occur?</td>
<td>Especially in the dry season</td>
<td>During wet season</td>
<td>As soon as the shoots emerge</td>
</tr>
<tr>
<td>What do you do about it?</td>
<td>No control</td>
<td>No control</td>
<td>No control</td>
</tr>
<tr>
<td>What is the cause?</td>
<td>A caterpillar</td>
<td>Beetle/caterpillar</td>
<td>Beetles</td>
</tr>
<tr>
<td>Where do the pests come from?</td>
<td>Soil or elsewhere</td>
<td>From other vegetables</td>
<td>From other islands</td>
</tr>
</tbody>
</table>

**Results from samples collected from gardens**

The three groups collected pests from nearby gardens and discussed the various insects found in a plenary session. They confirmed the opinions from the earlier session when the groups identified the main pests of the three crops of interest.

**Sliperi kabis**: The green weevils come in small numbers eating the underside of the leaves. However, the black beetle (*Nisotra*) comes in large numbers and is the major insect pest of *sliperi kabis*. Scale insects were found, which suck the sap from the stems, and can cause problems.

**Sweet Potato**: The sweet potato horn worm (*Agrius convolvuli*), a tortoise beetle, and the sweet potato weevil were the most important pests.
**Yard-long beans:** No samples of insect pests were found; more an indication of the decline in cultivation of this crop, than a lack of pests.

**Farmers quotations on problems affecting slippery cabbage**

“Even due to this pest problem, we try our best to grow this crop (sliperi kabis) by shifting cultivation and hand picking of insects just to get some edible leaves as this is our main vegetable”

Jeniffer Susurii of Malothawa Village.

“As soon as the cabbage is grown and starts to produce leaves the cabbage is attacked. This makes it only possible to harvest the cabbage once, and then it is completely damaged by the pests. We used to market our produce at the Auki market, but now we can’t even at the Silolo market.”

Magaret Irota of Silolo Village.

“I used to plant the slippery cabbage, but now I do not have it due to the pest problem. I now eat Ute or taro leave as vegetables”.

Daniel Lio of Makokoa village.

“Some farmers plant the cabbage on clover covered soil and the cabbage seem to grow healthy; seems to grow longer than the others planted the normal way.”

Henry Konairara of Loina village.

**Control strategies**

**Insect and disease control**

Wilco Liebregts talked to the farmers about the insect pests mentioned in the group sessions and collected from the gardens during practicals. The pests were identified, life cycles explained and economic aspects of infestations discussed. Advice was given on management strategies, with an emphasis on cultural (clean planting material, site selection - away from previous crops, and crop rotation) and biological control. Farmers were introduced to biological control concepts, and examples were provided from the samples collected.

**Sweet potato.** Insect and disease problems were not thought to be sufficiently significant to cause any yield losses. However, the importance of cultural control methods was emphasised, in particular, crop rotation and site selection. These issues also relate to soil fertility.

**Sliperi kabis.** The Chrysomelid beetle (*Nisotra basselae*), the cause of severe damage to the leaves, was the most important pest. A leaf-rolling caterpillar was also found to be damaging, and samples were collected for photography, incubation and identification. The biology of the pest and the potential of biological control were described, and how it might be carried out.
**Yard-long beans.** They were heavily attacked by several species of sap-sucking bugs (Hemiptera), to the extent that many farmers had stopped growing them. Farmers were shown how to make paper bags (sleeves), which they can hang around the young beans, to prevent attack. The bags can be re-used several times. A problem in doing this, and one pointed out by the farmers, was the shortage of any paper to make the bags. DAL and KGA were asked to supply the farmers with old newspapers.

**Farmer trials**

Farmers were keen to experiment, to consider the proposed control measures, particularly on crops of *sliperi kabis* and beans. They were very enthusiastic about the trials. Five control measures were proposed, four of the control methods used locally made pesticides, and, the fifth, paper bags to protect bean pods from attack by sucking insects.

The trials with the pesticides will be done on both *sliperi kabis* and beans, while the bagging trial is specifically for beans. The methods for making the sprays are given in Annex 2. The bags, made from newspaper (or any other type of paper) are to be fixed around the beans when they are still young.

The participants were advised to collect data on 1) date of planting, 2) insect damage, and 3) presence of insects at intervals after spraying. The proposed date for review of the trials was in September. The groups doing the trials are given in Annex 4.

**Closing remarks**

Wilco Liebregts reiterated the importance of making use of the Pestnet facilities at Silolo. Henry Konairara of Loina Village, highlighted the importance of participation of all sectors of the community in such workshops. He said that the level of understanding and literacy level within the community are not the same. Therefore, it is best for all to work together to share information for the sake of each other. He further thanked the Kastom Garden association, DAL and PestNet collaboration for bringing this project to this region as it is usually left out from development assistance.

**Acknowledgement**

We extend are thanks to Chief Bollen and the Malothawa community for their hospitality in hosting the two-day Workshop. We also want to thank the participants from surrounding villages for attending; this made the Workshop a greater success. Thanks also go to Lician Konata for his hospitality and kindness in accommodating the resource team during the Workshop.

Michael Ho’ota  
DAL Honiara  
July 2004
### Workshop Participants

#### Farmers

<table>
<thead>
<tr>
<th>Name</th>
<th>Village</th>
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<tbody>
<tr>
<td>Dolena Ramoi</td>
<td>Kefuboboo</td>
</tr>
<tr>
<td>Falu John</td>
<td>Silolo</td>
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<tr>
<td>Richard Ringamae</td>
<td>Magwabaru</td>
</tr>
<tr>
<td>Anna Maeramo</td>
<td>Abunio</td>
</tr>
<tr>
<td>Iro Wasi</td>
<td>Kafoisila</td>
</tr>
<tr>
<td>Alfred Nolan</td>
<td>Malathawa</td>
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<tr>
<td>Solo</td>
<td>Gioro</td>
</tr>
<tr>
<td>Betty John</td>
<td>Lafulanga</td>
</tr>
<tr>
<td>Enofiri</td>
<td>Magwabaru</td>
</tr>
<tr>
<td>Alata Alick</td>
<td>Magwabaru</td>
</tr>
<tr>
<td>Hellen Konata</td>
<td>Silolo</td>
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<tr>
<td>Lorata</td>
<td>Dadafu</td>
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<tr>
<td>Susurii Seda</td>
<td>Malathawa</td>
</tr>
<tr>
<td>Alfred Suiedi</td>
<td>Lafulanga</td>
</tr>
<tr>
<td>Takata Mauriasi</td>
<td>Kafoniwane</td>
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<tr>
<td>Elama Kasi</td>
<td>Tataefata</td>
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<tr>
<td>Jason Otanamae</td>
<td>Loina</td>
</tr>
<tr>
<td>Daniel Lio</td>
<td>Makokoa</td>
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<tr>
<td>Henry Kanairara</td>
<td>Loina</td>
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</tbody>
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#### Resource persons

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Wilco Liebregts</td>
<td>PestNet</td>
</tr>
<tr>
<td>Roselyn Kabu</td>
<td>KGA</td>
</tr>
<tr>
<td>Roselyn Lulumae</td>
<td>KGA</td>
</tr>
<tr>
<td>Lilly Wame</td>
<td>DAL</td>
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<tr>
<td>John Faleka</td>
<td>DAL</td>
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<tr>
<td>Michael Ho’ota</td>
<td>DAL</td>
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</tbody>
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### Workshop timetable

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
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| 8:30 – 10:00 | Word of Prayer  
Introductions of Participants  
Introduction of Resource Persons  
Word of welcome by Chief Bollen of Malothawa  
Introduction of workshop and functions of the Linking farmers project by Lilly Wame. | Identification of samples of pest and diseases collected by farmers from their fields. |
| 10.00 – 10.20 | Break | Break |
| 10.30 | Small groups: Sweet potato, Slippery Cabbage, bean pest and disease stories:  
• What is the problem?  
• What does it do?  
• Where does it come from?  
• What season?  
• What causes it?  
• What do you do about it? | Group discussion on pest identified.  
Group presentations |
| 12.00 | Lunch | Lunch |
| 1:30 | Small group presentations | Discussion on control measures. |
| 2:00 | Ranking of problems voting by group members:  
• When the problems occur?  
• What do they do with the problem?  
• What cause it?  
• Where they come from? | Identification of treatments and trials.  
Conclusions |
| 3:00 | Small Group Presentations | Closing |
Methods of making botanical sprays

**Tobacco & Chilli**

- 10 large leaves (green tobacco)
- 5 Chillies
- Crush leaves and chillies
- Add 5 litres of water
- Strain and apply

*optional boil in water*

**Fu’u**

- 3–4 Fu’u fruits.
- Scrape the fruits
- Mix with water, plus soap. (2litres/5 litres)
- Strain and apply

**Uka spray (Derris)**

- 3 roots
- Grind - squeeze & strain
- Scrape Kwato tree bark
- 1 kg plastic sugar filled with scraped Kwato.
- 5 heads O’oto
- Mix all in a bucket.
- Cover with water overnight
- Add up to 5 litres
- Strain and apply

**Furi**

- Scrape of outer bark
- Scrape inside bark
- Fill 1 kg plastic sugar of scraped bark
- Add 5 ground chillies
- Add 20 litres of water
- Strain and apply
Farmer Trial groups

Beans

Henry Kanaira
Henafari
Daniel Lio
Alick Alata
Augina Bumata
Jenny Lorata
Elama Kasi

Paper Method

Augina Bumata
H. Kanaia
J. Lorata

Fu’u spray

H. Kanaia

Uka spray

D. Lio
Augina Bumata
Jenny Lorata
Enofiri
Elama Kasi

Furi spray

Laefasia
Alick Alata

The rest of the participants will carry out trials on the *sliperi kabis*