

Lead Firm Training Module / Session Plans
(for LF contract farmers producing mung bean)

Schedule

Topic	Time		Presenter
	Morning	Afternoon	
Topic 1 Registration Introduction/presentation of learning objectives.	9.00am- 9.30am	1.30pm- 2.00pm	
Topic 2 Field Demonstration-Showing Demo plot	9.30- 10.30am	2.00pm- 3.00pm	
Tea break Return to training/coaching room	10.30am- 10.45am	3.00pm- 3.15pm	
Topic 3 Diseases of mungbean and their control	10.45am- 11.30am	3.15pm- 4.00pm	
Topic 4 Insects of mungbean and their control	11.30am- 12.15pm	4.00pm- 4.45pm	
Topic 5 Summery discussion through formation of small group	12.15pm- 12.45pm	4.45pm- 5.15pm	
Lunch/Prayer (end of training)	12.45pm	5.15pm	

Note:

- Coaching of coaching team will be held-----, 2007

Training Schedule

Date	Morning (09.00am- 01.00pm)	Afternoon (1.30pm- 05.30pm)

Facilitator Notes

TOPIC 1: INTRODUCTION

Duration: 30 minutes

Methodology: Facilitator introduces coaching team and asks participants to introduce themselves. He/she then introduces the topic and presents the learning objectives

Materials/ preparations Needed: Visual aid or handout for learning objectives (optional)

Technical Notes

It is known to us that diseases and insects are very detrimental for the crop yield. If disease and insect cannot be controlled in time significant yield loss will be the result. Therefore the producer has to be very careful about these. Considering the importance, a comprehensive coaching session is prepared and the said coaching includes the following learning objectives:

LEARNING OBJECTIVES

AT THE END OF THE SESSION PARTICIPANTS WILL BE ABLE TO DESCRIBE:

Major diseases of mungbean:

- Major diseases of mungbean with causal organism
- Symptoms of the diseases
- Extent of damages caused by different organisms
- Their control measure

Major Insects of mungbean:

- Major insects of mungbean with causal organism
- Symptoms for identifying the insects
- Extent of damages caused by different organisms
- Their control measure

Facilitator Notes

TOPIC 2: Field Demonstration

Duration: 1.10 hours

Methodology: Facilitator will bring participants to demo plot (in the established plot) to demonstrate practices. He/she will conduct question/answers on topics while in the field (see questions in technical notes below).

Timing for Field Demonstration (includes question / answer):

- Effect of spacing
- Effect of fertilizer
- Crop growth
- Effect of seed rate and seed treatment
- Effect of proper land preparation
- Compare with non CF crop etc

Materials/preparations to be needed: Training notes, Sprayer, pesticides, mask, hand gloves, water etc.

Facilitator Notes

TOPIC 3: Diseases of mungbean and their control

Learning Objectives: At the End Of The Session Participants Will Be Able To Describe:

Major diseases of mungbean:

- Major diseases of mungbean with causal organism
- Symptoms of the diseases
- Extent of damages caused by different organisms
- Their control measure

Duration : 45 minutes

Methodology : Question and answer
Colored pictures showing disease symptoms

Materials needed : Hand out, Pictures showing disease symptoms
Etc.

Technical notes:

Question for participants: **What are the different diseases generally involved in mungbean and which one is/are the most important?** (*Facilitator listens to responses and completes as necessary*). *Present posters/distribute coloured pictures showing diseased/insect affected plants.*

A total of 16 diseases have been recorded on mungbean in Bangladesh. Out of which three (3) diseases have been recognized as the most significant.

Yellow mosaic virus-Mungbean yellow mosaic virus (YMV):

Symptom: YMV causes irregular yellow and green patches in older leaves and complete yellowing in young leaves. Affected plants produce fewer flowers and pods. Pods often develop mottling, remain small and contain fewer and smaller seeds.

Control:

- Use of resistant/tolerant variety
- Adjusting sowing dates
- Rouging out affected plant
- Spraying systemic insecticides like Dimecron, Sumithion have been effective in reducing vector population vis-à-vis mosaic incidence.

Cercospora leaf Spot (*Cercospora cruenta*):

Symptoms: The initial symptoms of the disease appear as water soaked spots on leaves. As spot become older may coalesce together causing an enlarged

dead area on the infected leaves. Heavy infection of cercospora can cause mungbean plant pre maturely drying and defoliation.

Control:

- Bavistin 50 WP (0.1%) to be sprayed at an interval of 12-15 days for twice or thrice can be used for controlling Cercospora leaf spot.
- Clean cultivation
- Seeds to be collected from disease free plants

Powdery mildew (*Erysiphe polygoni*):

Symptoms: The disease appears first on leaves as powdery masses which later turn dirty white. Symptoms appear on pods, stems and branches

Control:

- Tilt-250 EC or Thiovit (0.2%0 at an interval of 10-12 days twice or thrice.
- Thiovit 80 WP at 0.2% is also effective

Leaf rot (*Sclerotinia sclerotiorum*):

Symptoms: The disease appears in late rainy or early winter. Develop water soaked lesion on leaves which under warm and humid weather enlarges and covers almost the entire leaf area. The infected leaves are dried during bright sunny days and turn light to grey colour.

Control:

- No organized research work has done yet.
- The infected crop residues should be removed from the field before the sclerotia are fully matured

Facilitator Notes

TOPIC 4: Insects of Mungbean and their control

Learning Objectives: At the End Of The Session Participants Will Be Able To Describe:

Major Insects of mungbean:

- Major insects of mungbean with causal organism
- Symptoms for identifying the insects
- Extent of damages caused by different organisms
- Their control measure

Duration : 45 minutes

Methodology : Question and answer
Colored pictures showing insects and symptoms

Materials needed : Hand out, Pictures showing insects and symptoms
Etc.

Technical notes:

Question for participants: **What is the most damaging insects cause damage to mungbean?**

A total of 16 insect species have been reported to attack on mungbean in Bangladesh. The major insect pests are Hairy Caterpillar, Pod borer, Thrips and Bruchids cause significant yield losses to mungbean.

Hairy caterpillar (*Spilaractia oblique*):

Symptom: The caterpillar feed voraciously on the leaves. Once the caterpillar swarmed the field nothing but the bare stems will remain. The name of the insect denoted that there are plenty of hairs on the body of the insects.

Control:

- At the initial stage infected leaves are collected and destroyed

- Make a furrow surrounding the field and water mixed with Kerosin oil is filled in to the furrow. The larvae will be killed when they move from this field to another.
- Spraying Diazenone 60 EC @ 1.5ml per liter of water.
- Spraying Ripcord 10 EC or Cymbush 10 EC @ 1ml per liter of water.

Pod borer (*Helociverpa armigera* and *Etiella zinckenella*):

Symptoms: Young larvae feed on blossoms and young pods that drop. Older pods show a brown spots where the larvae has entered. Borer makes hole on the pod and entered. Seeds are being eaten up by the borer.

Control:

- 1 ml Symbush/Ripcord 10 EC to be mixed in 1 liter water and to be sprayed 10-12 days interval.

Aphids (*Megalurothrips*)/Thrips:

Symptoms: Suck sap from young/succulent twig and flower; leaves.

Control: Spraying Malathion, Sumithion, Diazinon, Perfection 40 EC or Metasystox- R-25 EC @ 2 ml per liter of water.

Bruchid:

Symptom: This is a storage insect. Larvae and adult insect eat the grain sap. The infected seed does not germinate properly.

Control: Before storing seeds to dried properly (8-10% moisture). Phostoxin tablet can be used @ 1 tablet per 50-100 bags.

Facilitator Notes

TOPIC 5: SUMMARY DISCUSSION IN SMALL GROUPS

Duration : 1 hour

Methodology: Facilitator asks participants to form small groups and to sit in a circle. He/she asks them to: 1) describe any challenges they face in the application of the topics presented; 2) list any final questions they have for the coaching team or other participants.

Facilitator asks a representative from each group to present any challenges or questions from their group.

Facilitator thanks participants for their participation and distributes a technical note hand-out with the information from the session.

Materials:

Technical note handout for distribution to each participant.