

1. First workshop (Day 0); Module 1

- Land preparation 1  
Band construction, plastering, leveling,  
Band is usually weak and needs to be improved by thick soil plastering.
- Nursery preparation  
Bed preparation, Bio-char application, sowing seed, water control  
<Preparation>  
**Seed, Biochar**, Shovel, Hoe, Rake, Rope, Scale, measuring tape, Bucket

Seed soaked for 24h and pre germinated for 24h, then pre germinated seed broadcast to the nursery bed at the rate of 100g/m (one full heap of single hand of man). Nursery beds need to be established with a water nursery method with 5 cm height from the bottom of the plot. After sowing seed, Nursery bed can be covered by banana leaves for initial 2days to protect from bird attack and keep it moist. Fertilization depends on soil fertility. If necessary, apply NPK (0.2kg for 10m). Biochar made by husk can be also applied (Row husk should not be applied to avoid variety contamination). Dick up drainage and set up a water gate in the plot to control water level. **Surface of the nursery bed should be very flat and level.** About the level of water, after sowing seed, water level should be slightly lower than the surface of the bed to avoid the seed to be submerged. Then 3 days later, water level can be raised to shallow level according to growth of seedlings.

2. Second workshop (20 DAS<sup>1</sup>); Module 2

- Basal fertilization (use NPK)
- Transplanting  
Uprooting seedling, transplanting with two methods (rope and line marker) in 30cm inter-row (space for lines) 15cm (space for hills) intra-row (22.2hills/m-2) or 25\*25cm (16 hills/m-2).  
<Preparation>

---

<sup>1</sup> Days After Sowing

Hoe, Rake, Rope, Fertilizer, Bucket, or basket for seedling

Farmers tend to use overgrown seedlings, so make sure the seedling is less than 3 weeks old. Uprooting is rough in some cases, so let farmers carefully uproot with roots. Also at transplanting, farmers tend to plant more seedlings than recommended. Make sure they plant three seedlings otherwise the seedling number will not be able to cover the whole area you planned. Planting depth is another point of mistake and farmers tend to plant deep. Keep the transplant around 3 cm depth otherwise you may not acquire enough tiller number at 50DAS.

Preferably one week before transplanting (at least 3 days before), land preparation had been done and at the same time applying basal fertilization of NPK. If it is not the case, we can still apply before transplanting. Multiple rope planting, rope with mark or Chaprak method can be recommended.



### 3. Third workshop (34 DAS); Module 3

- Weeding  
Rotary weeder, water control
- Top dressing half of Urea  
Timing and purpose (for tiller number)  
<Preparation>  
Rotary weeder (20cm width for 30cm inter-row, 16cm for 25cm), weeding hoe, fertilizer

Rotary weeders (Randak) have two purposes. One is weeding of course and the other one is cultivation which allows air getting into soil to activate the root system, especially those paddy fields showing some bubbles from the ground. This bubble is harmful for roots and can disturb the growth of roots. Maintain shallow water level at weeding time then make it deeper for 3days to kill non-aquatic weeds by letting them float on the surface of water.

Urea 1/2 (50kg/ha) can be applied as 1<sup>st</sup> top dressing after 1<sup>st</sup> weeding, then after 2 weeks followed by second weeding with 2<sup>nd</sup> top dressing of another half of Urea (50kg/ha).

### 4. Forth workshop (around 60 DAS); Module 4

- Pest and diseases  
Pest varieties, Pesticide use, Integrated pest management  
<Preparation>  
Pesticide and spray, leaf color charts

Discuss about the dilution rate of chemicals using scale which can be available for farmers. (Usually caps of chemicals indicate like 20ml or 30ml or using a measuring spoon) For example in the case of 500 times or 1:500, it means that for 10L (assume this is full tank) of water, 20ml of chemicals need to be mixed. Do not overdose. Need protection for hand by globe, mouth or nose by mask and long sleeve trousers and shirts.

We also need to discuss Integrated Pest management (IPM) which is not only

dependent on chemicals but also maintains a pest free environment by cleaning up Kabubu and maintaining plants health. For example, weed flowers accommodate rice bugs and later move into paddy fields. Too much fertilizer at once also disturbs the balance of nutrients and pests can easily attack rice. We can also talk about leaf color charts for the necessity of additional top dressing, to avoid overdose of Urea.

5. Fifth workshop (around 85DAS at heading stage); Module 5

- Seed production & maintenance  
Calculate required amounts of seed for next season, off type logging, How to maintain good seed.

Talk to farmers that MAF cannot provide seed for every year. Current production of seed is about 1/3 of the requirement. It means that every 3 years farmers can access quality seed. So, they need to maintain it for 3 years at least. Though maintenance is not difficult and just needs some concentration for seed plots.

If farmer need 30kg of seed for next season for 1ha, assuming yield of the field is 3ton/ha, then farmer need 10m\*10m field for seed production. At farmers level what is important is logging off type plants. This process can be done at the flowering stage by checking the color of flower and timing of flowering. Maturing the same timing is the best for yield and quality. Let everyone get into the field and remove the off type. Usually, farmers hesitate to remove off type and keep off type until harvest which causes contamination of seed.

(Farmer Field Day (FFD) (around 110 DAS)) -this can be done just before harvest period. At this moment;

- Share the experience of Model farmers
- Sensitize farmers to those who live in the surrounding area.

6. Harvest workshop (around 120-125 DAS) ; Module 6

- Harvest  
Appropriate harvest timing, Harvest method (include Pedal thresher)
- Postharvest  
Drying and moisture  
<Preparation>  
Sickle, scale, sack, basket(winnow) or bucket, thresher, tarpaulin.

This is time to discuss the quality of rice. Quality of rice is decided by appropriate harvest timing and after harvest treatment mainly how they dry grains. If rice over matures in the field, then rice starts cracking and, in some cases, starts germinating. After harvest, it is important to thresh as early as possible to avoid contact with water. Also soon after threshing, dry rice slowly less than 3 hours in a day preferably half shade. for 3 days until rice becomes dry enough before stock in the granary.

To conduct a simple yield survey in advance in a model farmer's site to show farmers about the rough estimation of yield and also discuss good practice by yield component according to the result of the field.