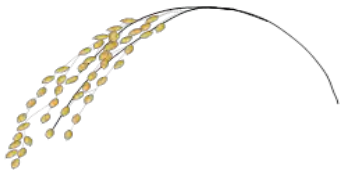
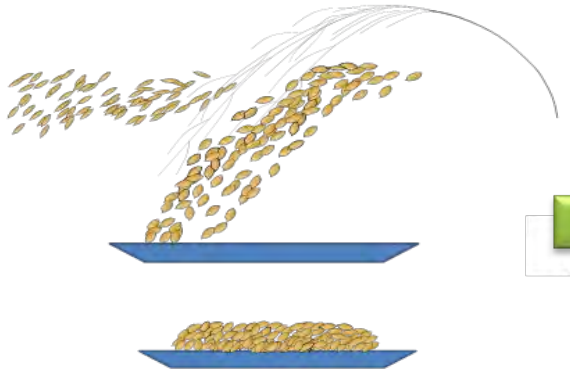
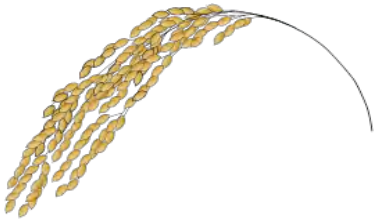
Extension Material on Technical Package on Rice Production

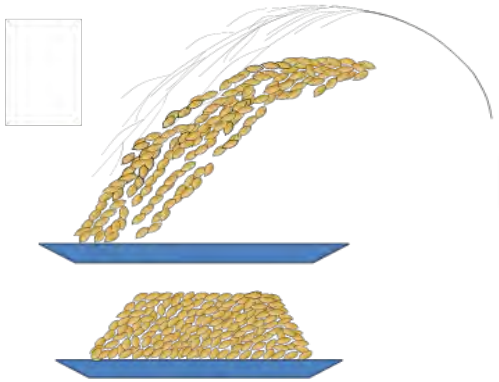
Sustainable Rice Development Project in Sierra Leone (JICA, MAFFS)

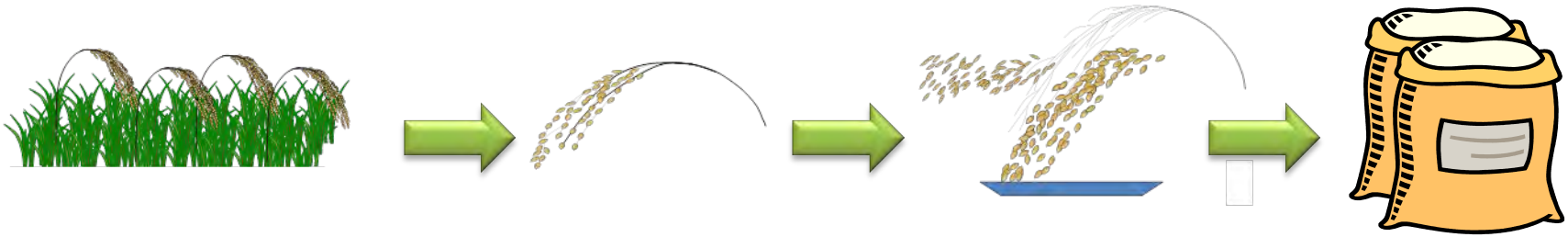
Three conditions to determine rice yield

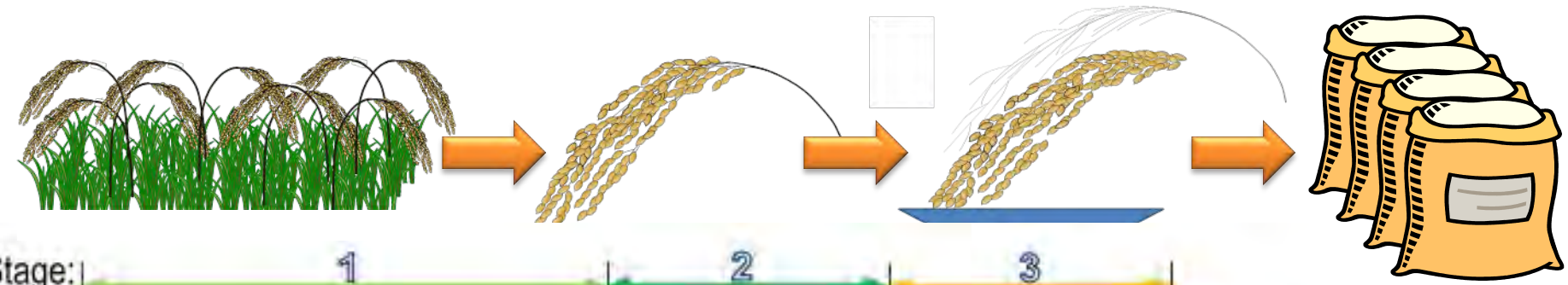


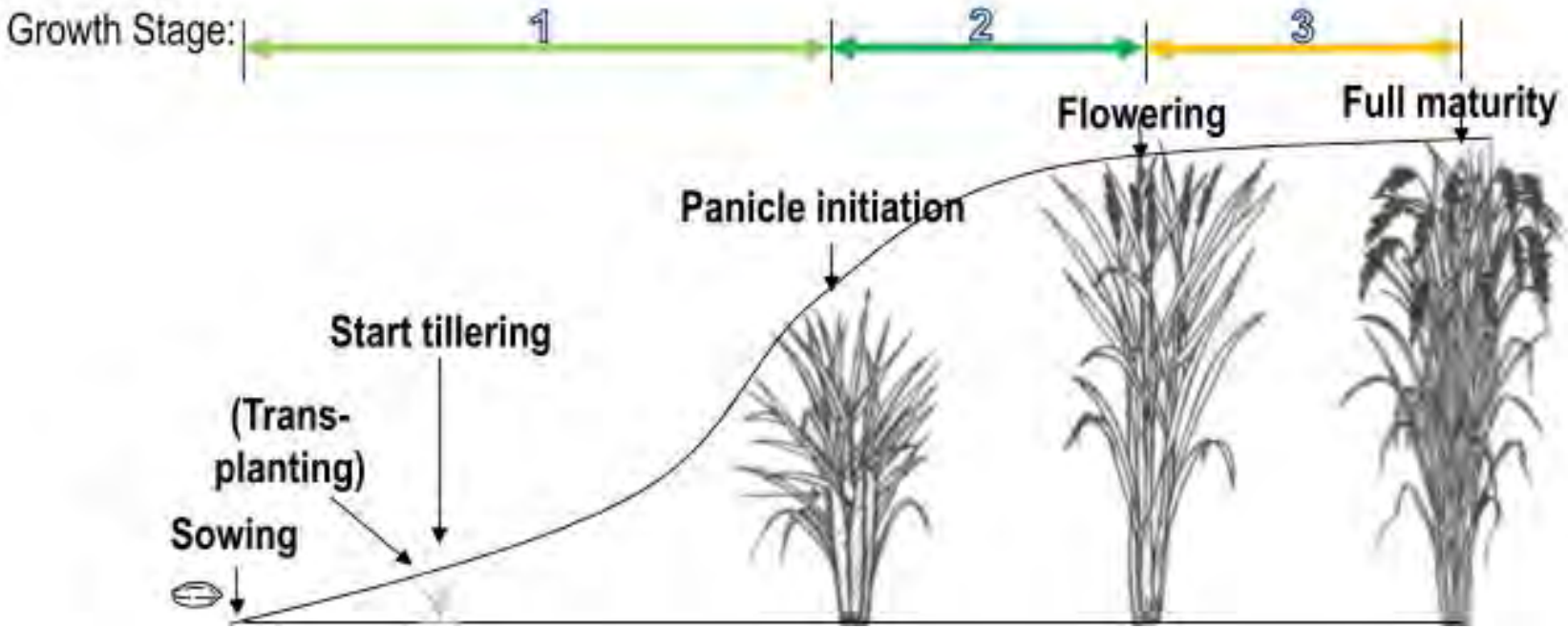











Growth Stage:
1
2
3
Flowering
Full maturity
Panicle initiation
Start tillering
(Trans-
planting)
Sowing

Rice variety

- Long duration (6 months)
  1 2 3 4 5 6
- Tall (130 cm)

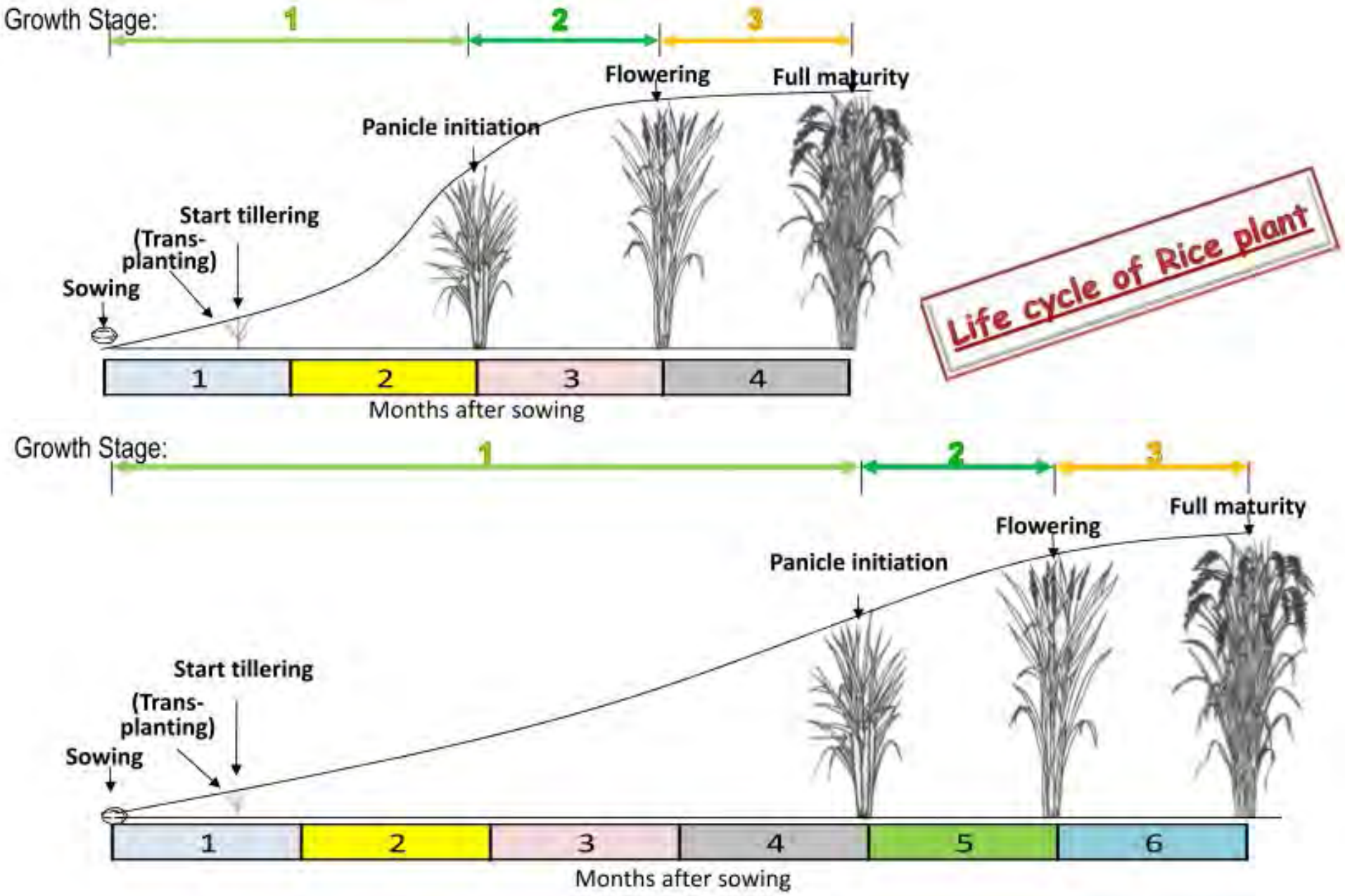
- Photosensitive

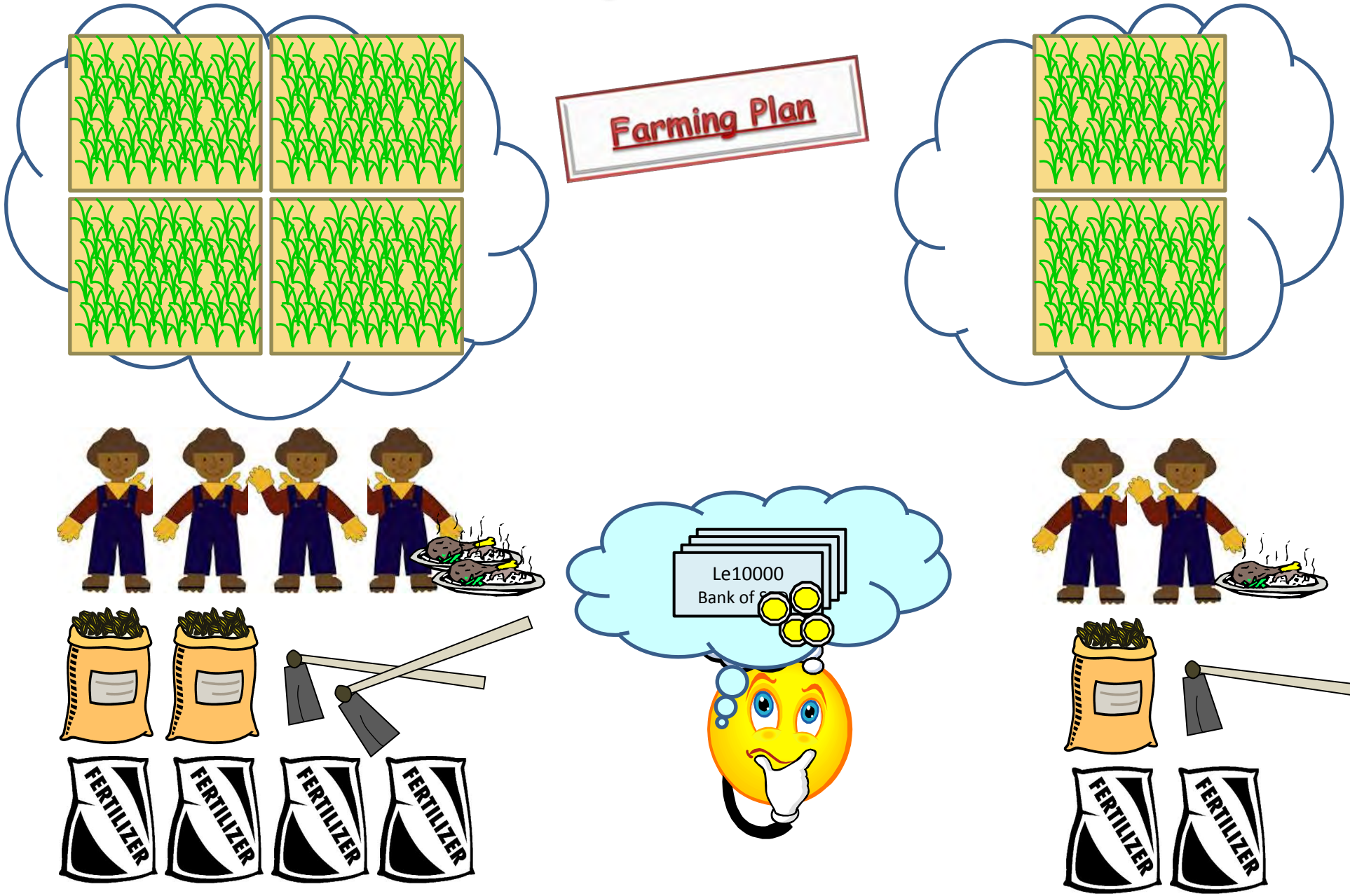
- Medium duration (5 months)
  1 2 3 4 5
- Medium (115 cm)

- Tolerant to Fe toxicity

- Medium duration (4 months)
  1 2 3 4
- Medium

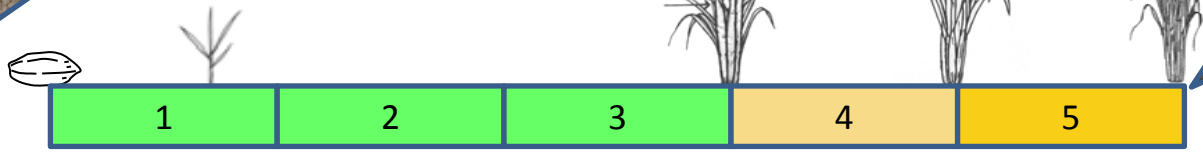
- Short duration (3-3.5 months)
  1 2 3
- Short


Growth Stage:
1
2
3
Flowering
Full maturity
Panicle initiation
Start tillering
(Trans-planting)
Sowing
1
2
3
4
Months after sowing
Life cycle of Rice plant
Growth Stage:
1
2
3
Full maturity
Flowering
Panicle initiation
Start tillering
(Trans-planting)
Sowing
1
2
3
4
5
6
Months after sowing


Farming Plan
Le10000
FERTILIZER
FERTILIZER
FERTILIZER
FERTILIZER
FERTILIZER
FERTILIZER

Cropping Calendar

May (5)	June (6)	July (7)	Aug (8)	Sept (9)	Oct (10)	Nov (11)	Dec (12)

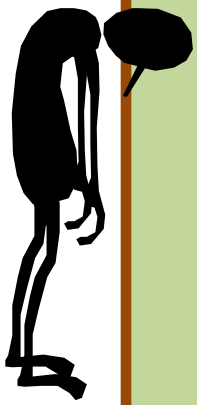


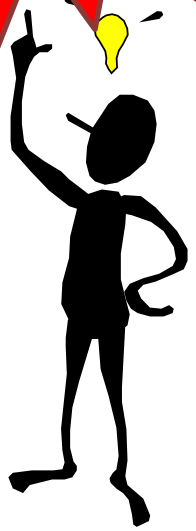
FFS Trial Plot

Conventional techniques

Improved techniques

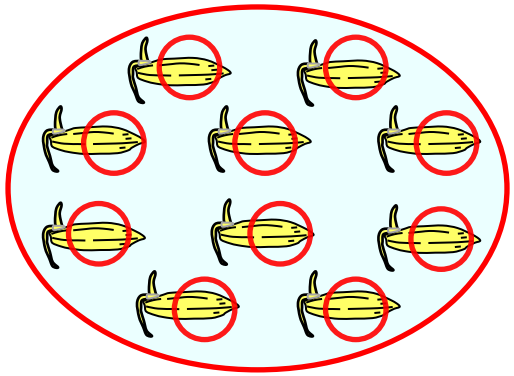
New Techniques

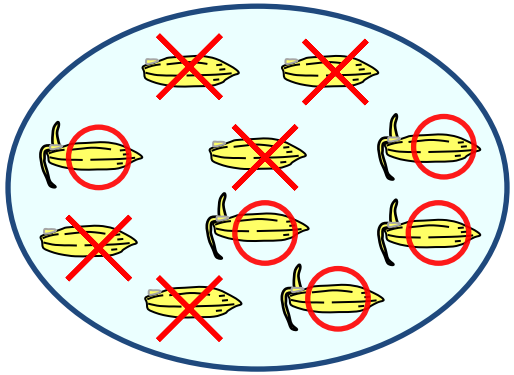


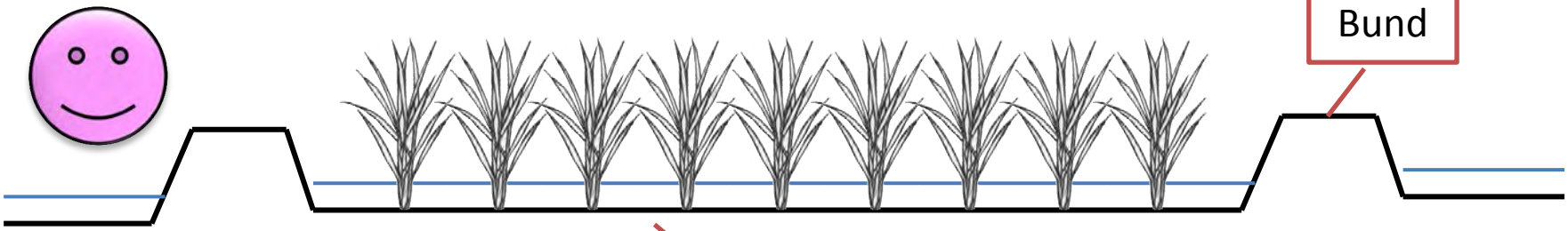


Compare rice production

Seed production 1



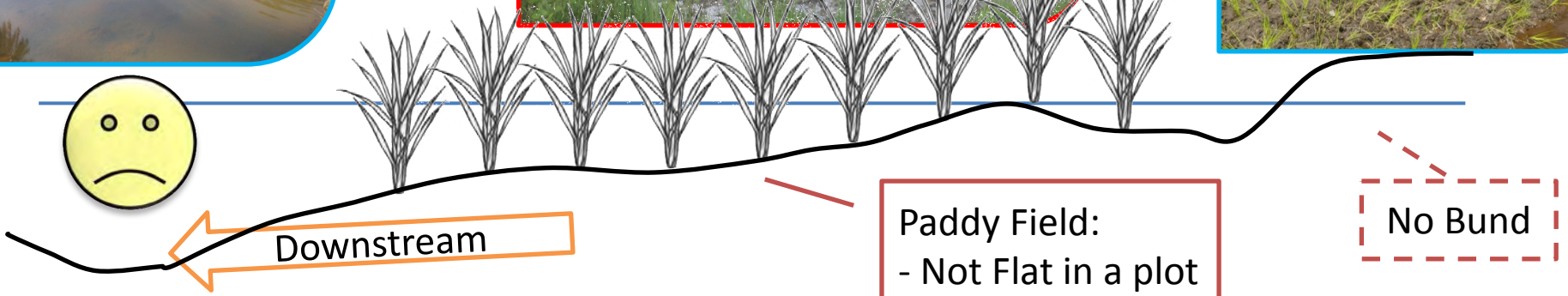




Bund

Downstream

Paddy Field:
- Flat in a plot

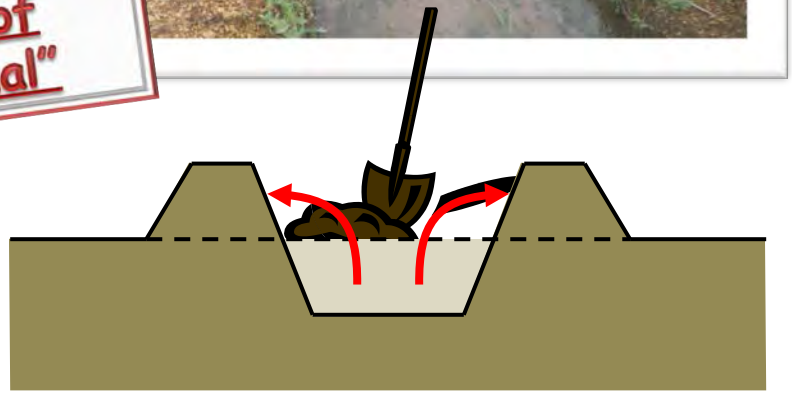


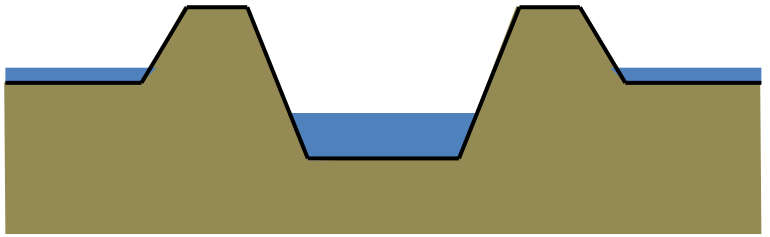
Downstream

Paddy Field:
- Not Flat in a plot

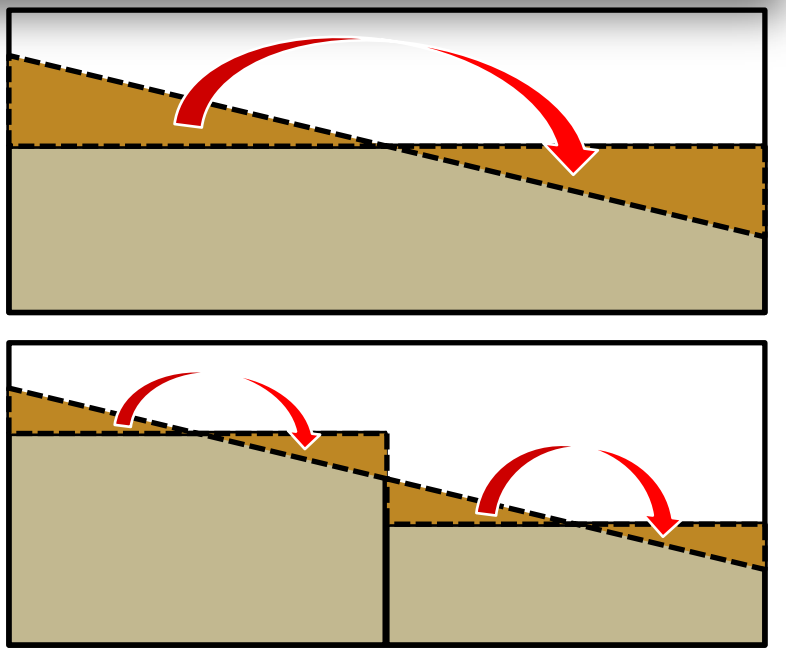
No Bund

Construction of "Drainage Canal"





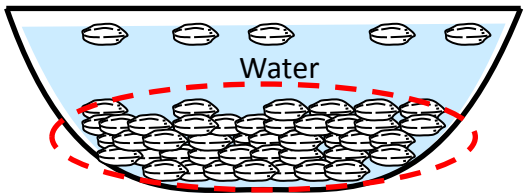
"Land Leveling"



Brushing, Clearing & Digging

Sorting

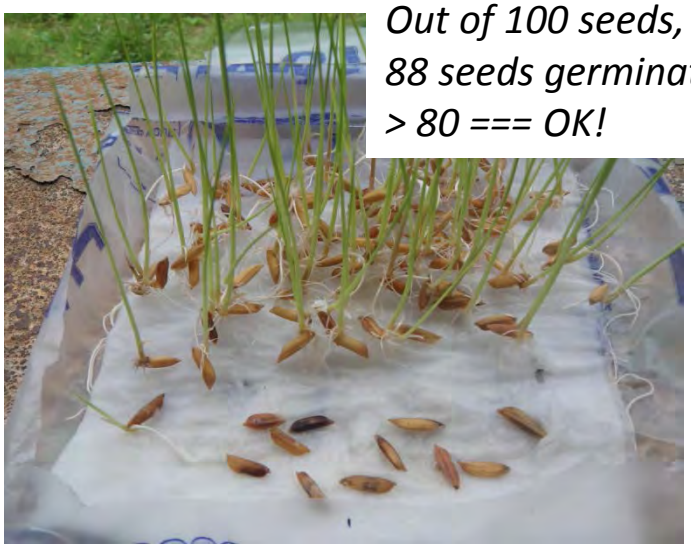
Selection with water



Remove

Use as seeds

Germination Test



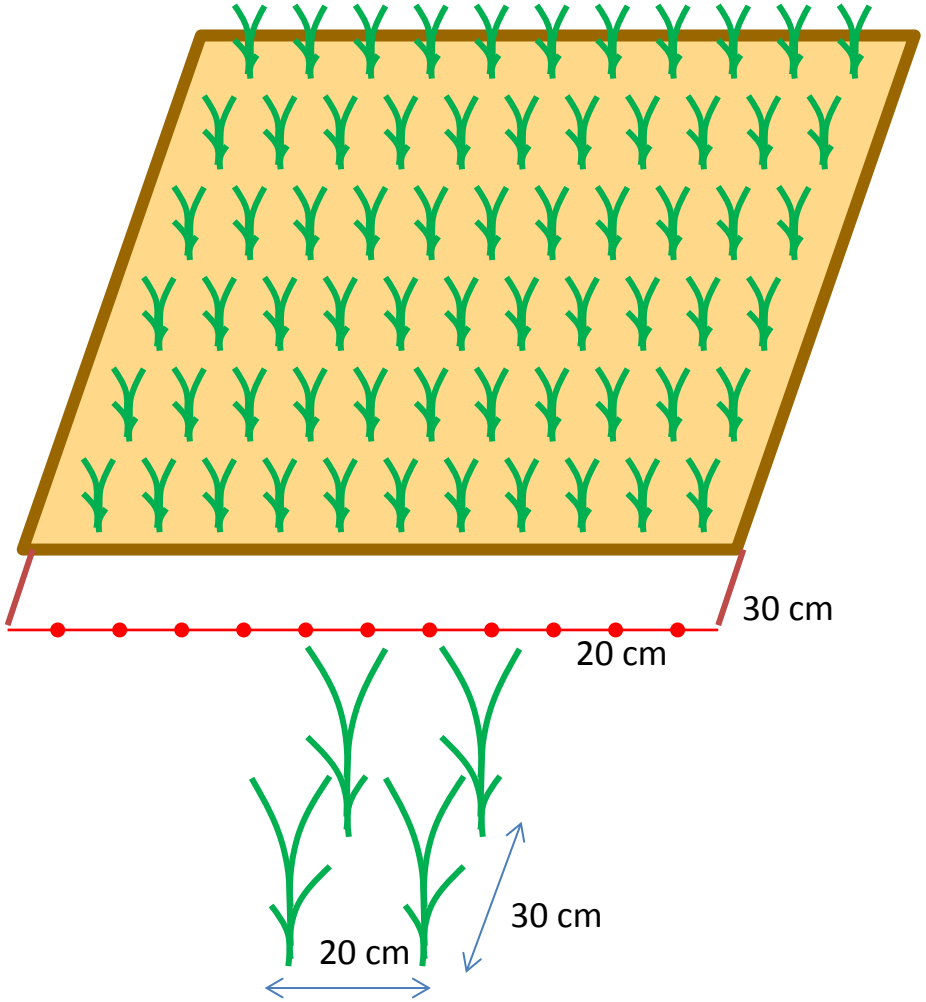
Out of 100 seeds,
88 seeds germinated
> 80 === OK!

Pre-germination

Standard in climate in July
Soaking seeds in water: 0.5 - 1 day
Incubation in rice bag: 1 - 2 days
(depending on temperature)

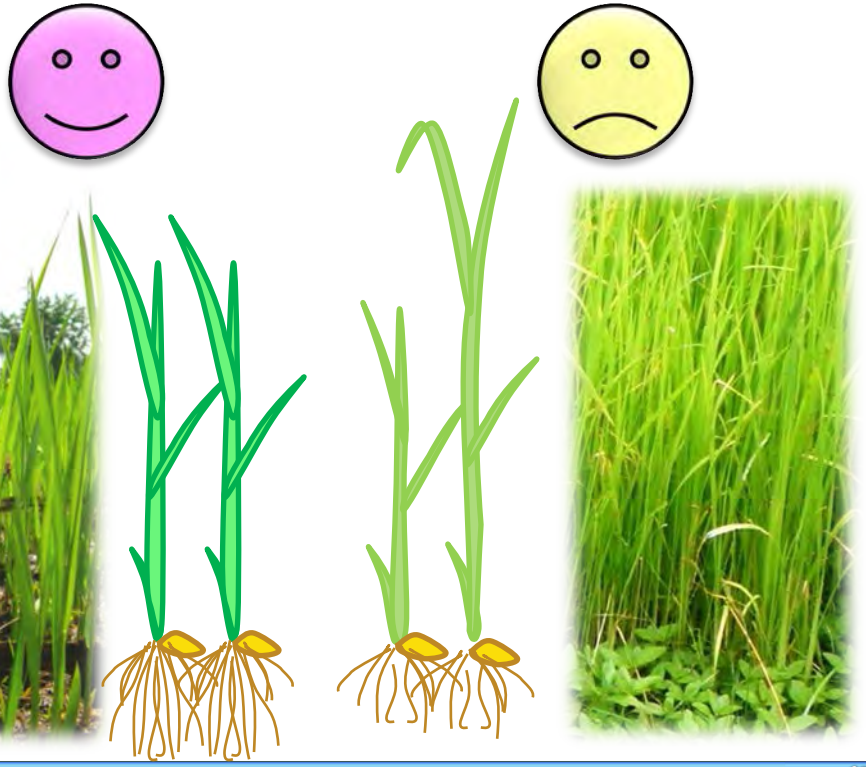
Just starting germination

Line Planting **Single seedling per hill**

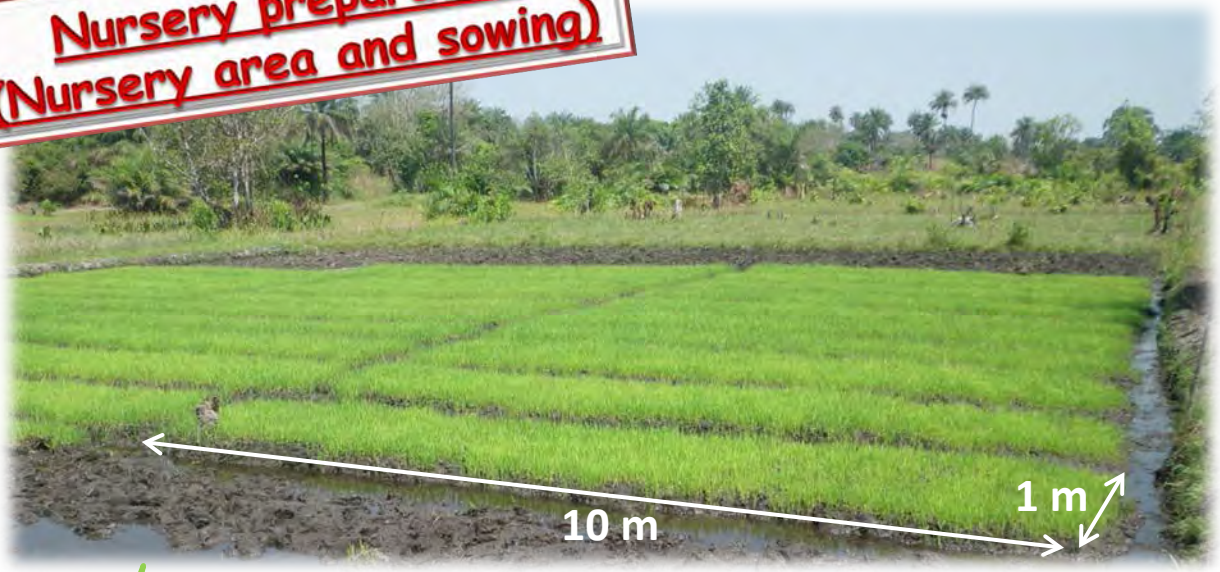


Nursery preparation (Site selection)

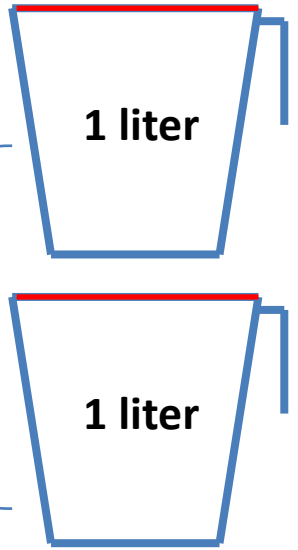
Nursery needs sunlight

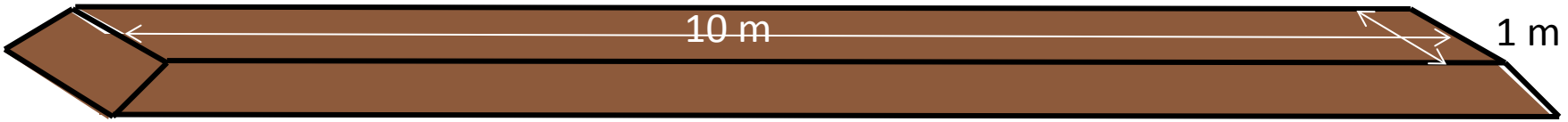


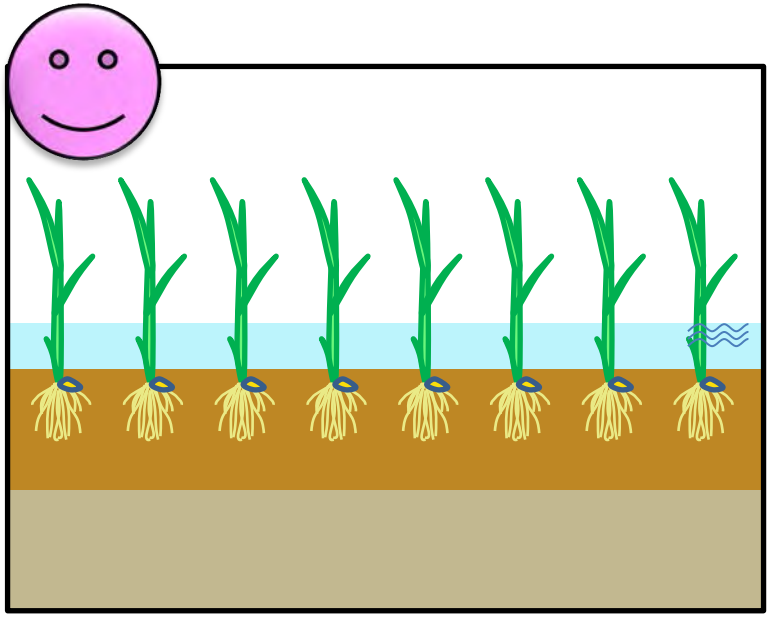
Nursery preparation (Nursery area and sowing)



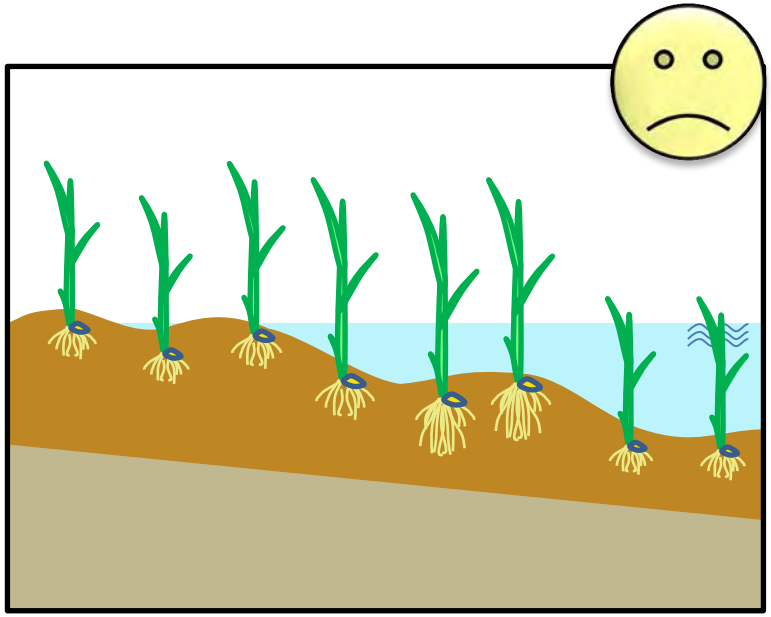
Seed Rice: 1 kg
= 2 litter



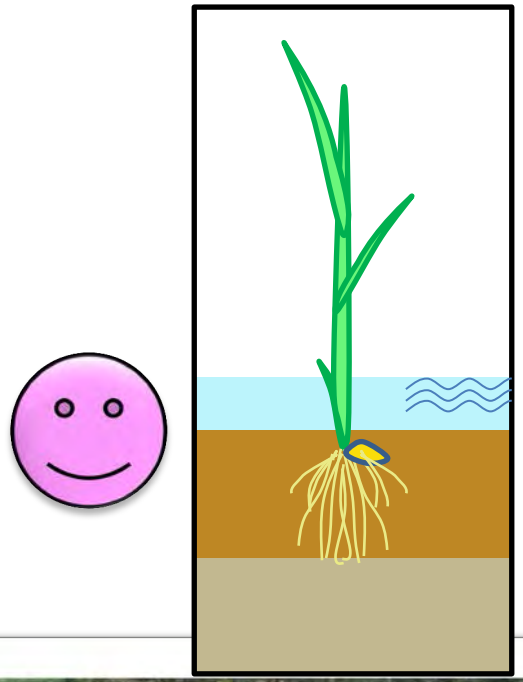


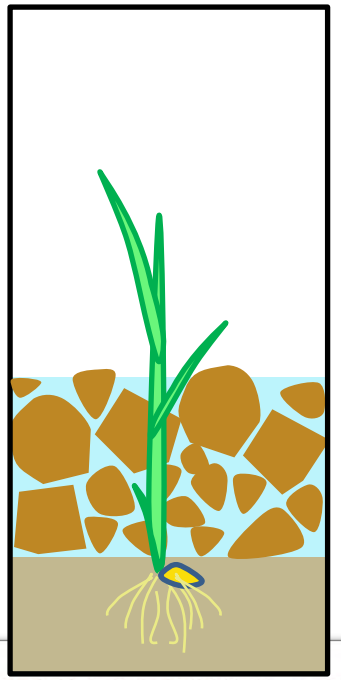


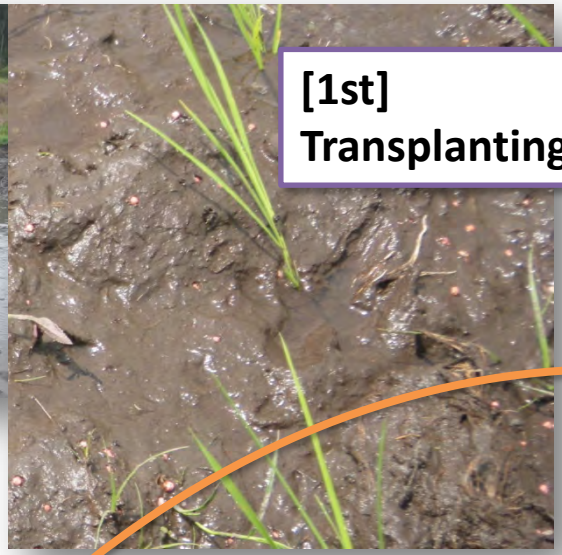
Leveling



Puddling

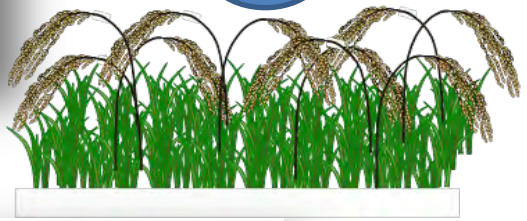






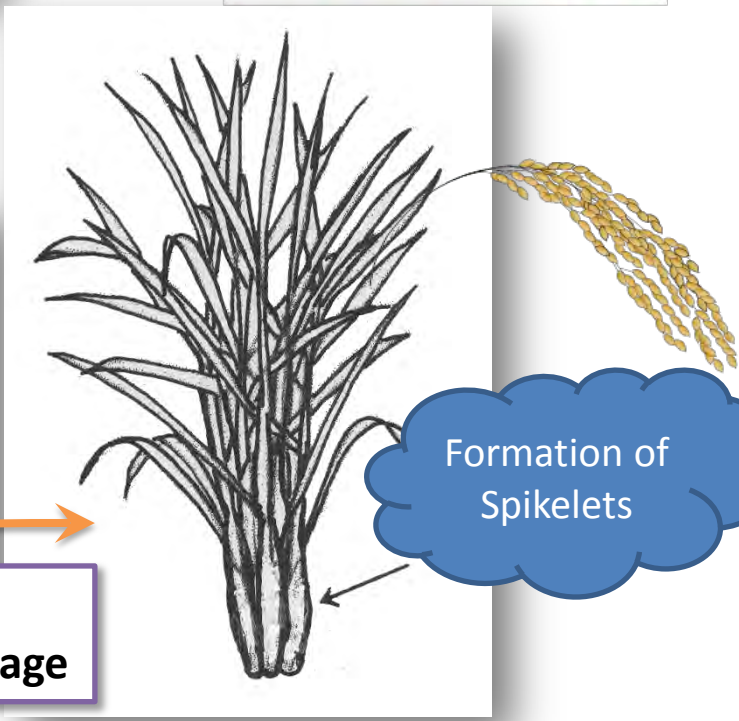
[1st]
Transplanting Stage

Promotion
of Tillering



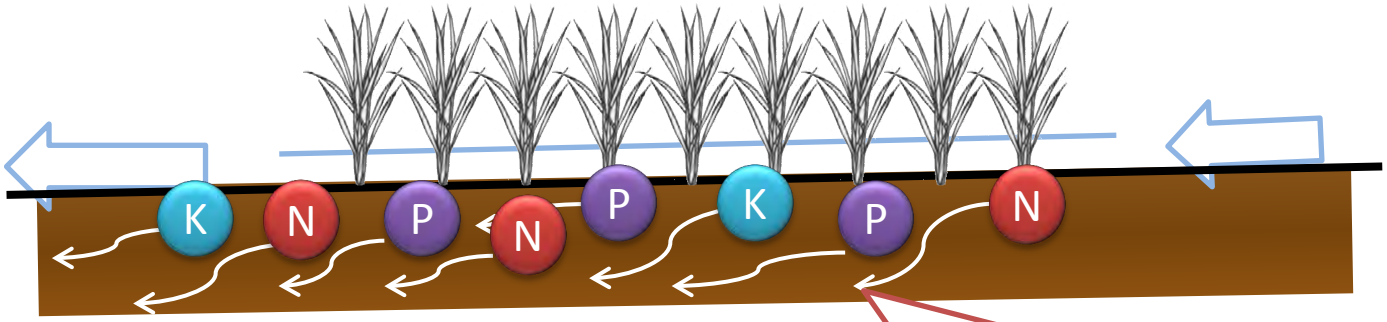
Fertilizer
Food for Rice

[2nd]
Panicle Initiation Stage

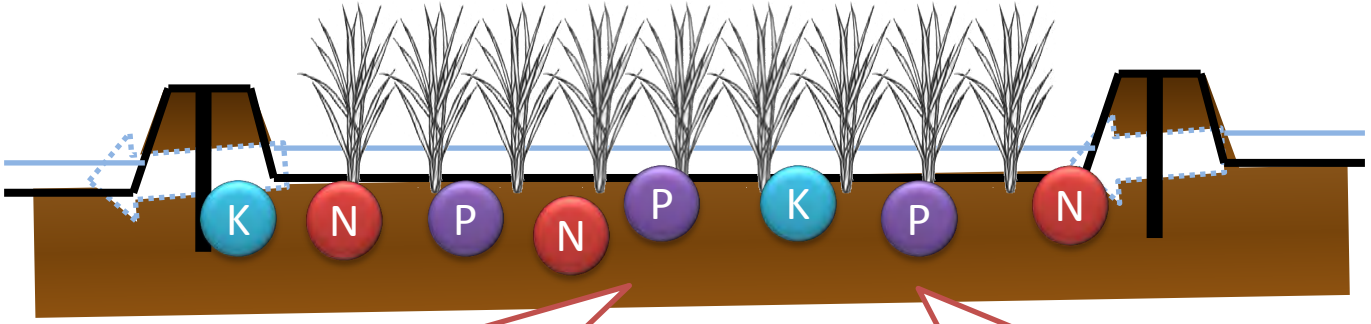


Formation of
Spikelets

Water control can enhance fertilizer use efficiency.



Fertilizer flow away with running water.
High cost to fertilizer - but no effect at all.



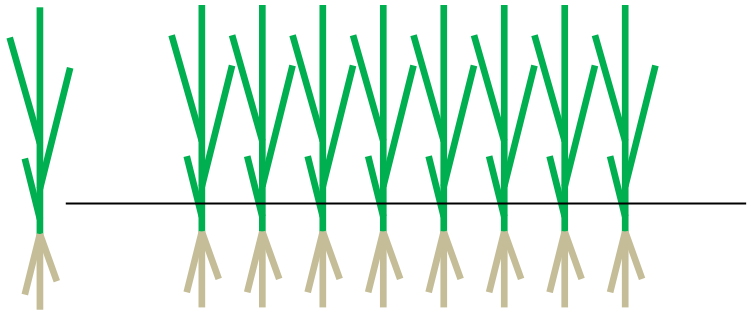
Keep water/fertilizer in the field by “Bund”

Low water level for better effect

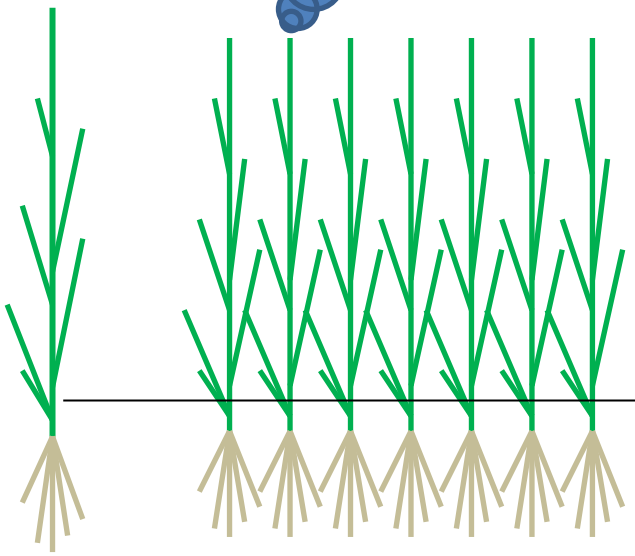
Nursery Period
Try to use young seedlings

Healthy,
Vital
4 leaves

Too long,
Deterioration,
5 - 6 leaves,
Tillering started



3 weeks

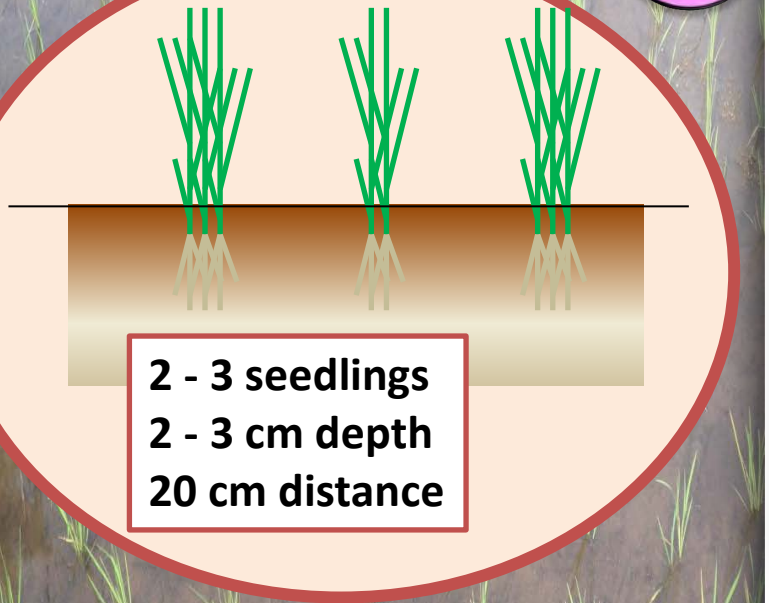


more than 1 month

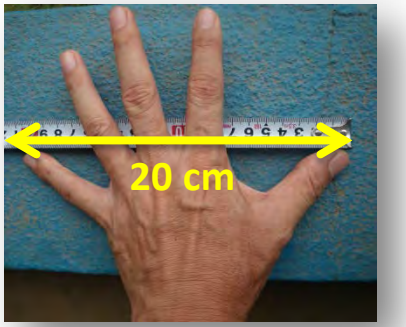
Uprooting of seedlings

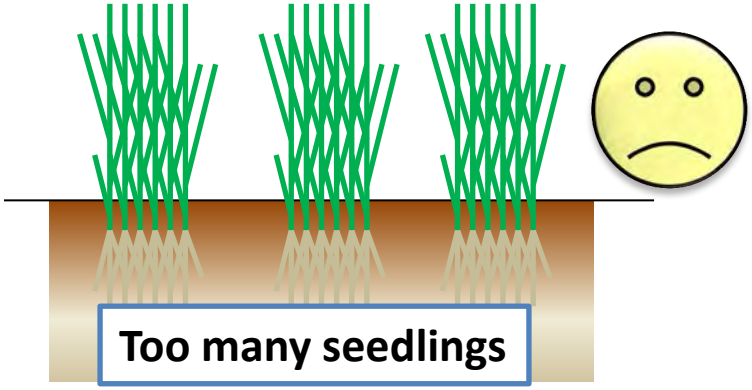
- ✓ Uproot seedlings carefully.
- ✓ Keep root wet.
- ✓ Transplant soon after uprooting.

Transplanting Method

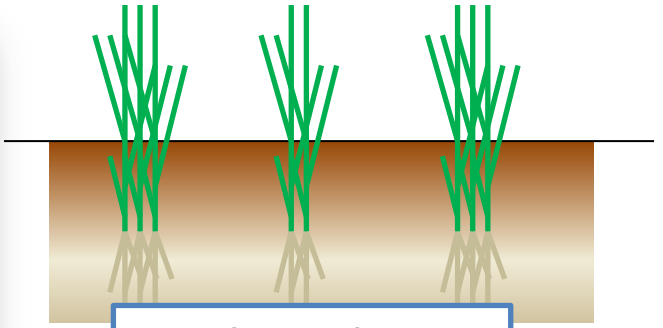


2 - 3 seedlings
2 - 3 cm depth
20 cm distance

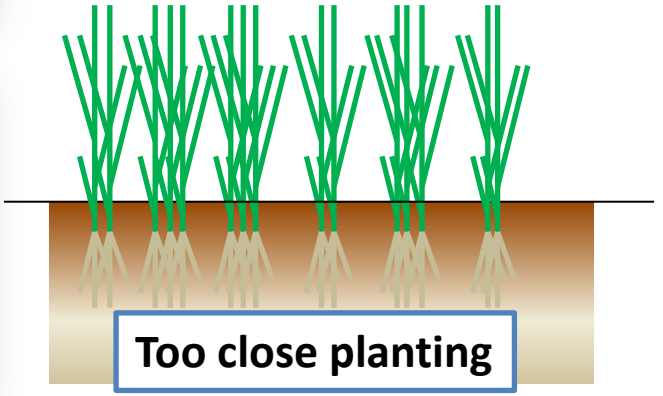




Too many seedlings



Too deep planting



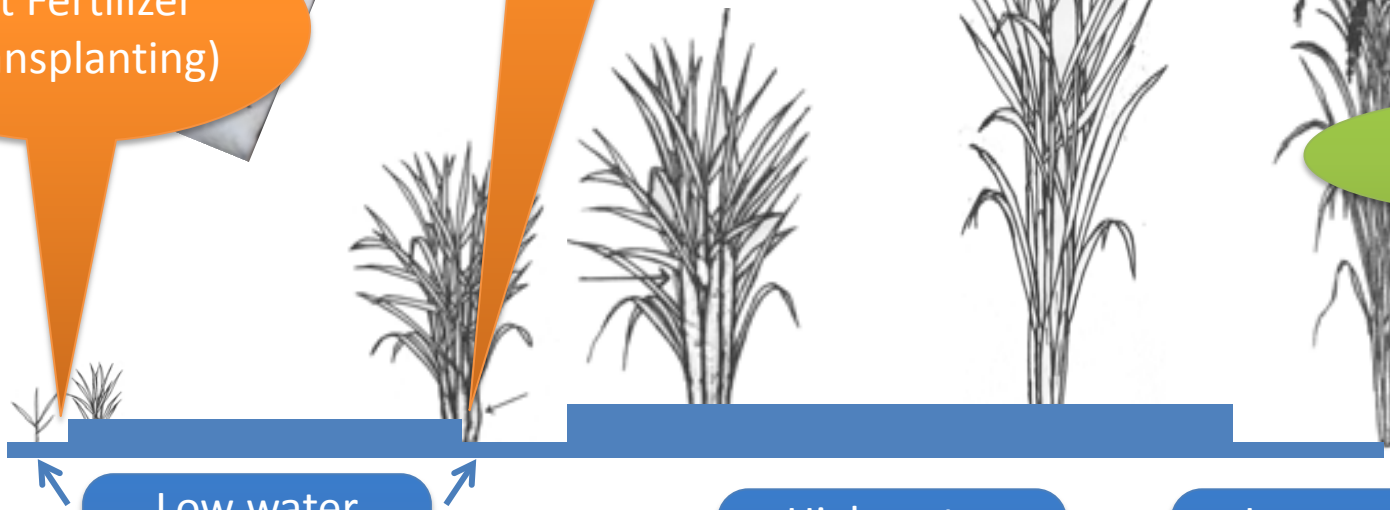
Too close planting

1st Fertilizer (Transplanting)

2nd Fertilizer (Panicle Initiation)

Control water depth by growing stage

Harvest

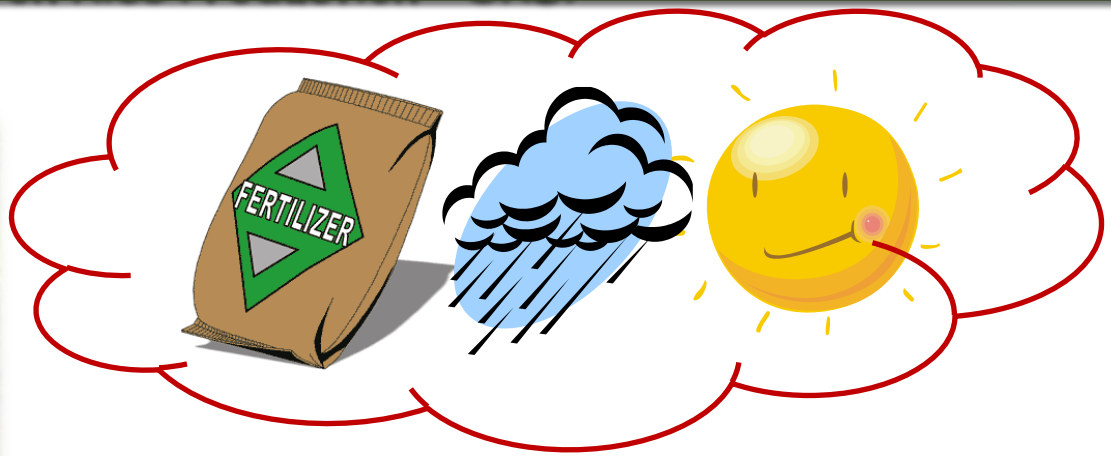


Low water at fertilizer application

High water after panicle initiation

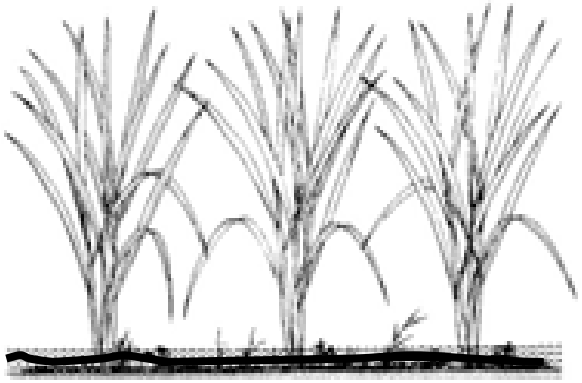
Low water before harvesting

Weed control



No weeding done

Stagnant growth of rice



Weeding done

Rice growth promoted

Source: modified based on “A Farmer’s Primer on Growing Rice”; IRRI; 1992

Insect

Gall midge

Caseworm

Leaf hopper

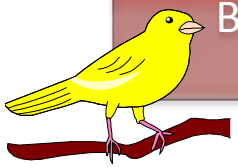
Disease

Rice bug

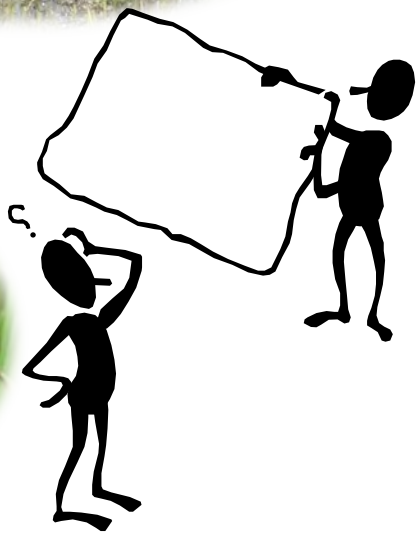
Rodents

Brown Spot

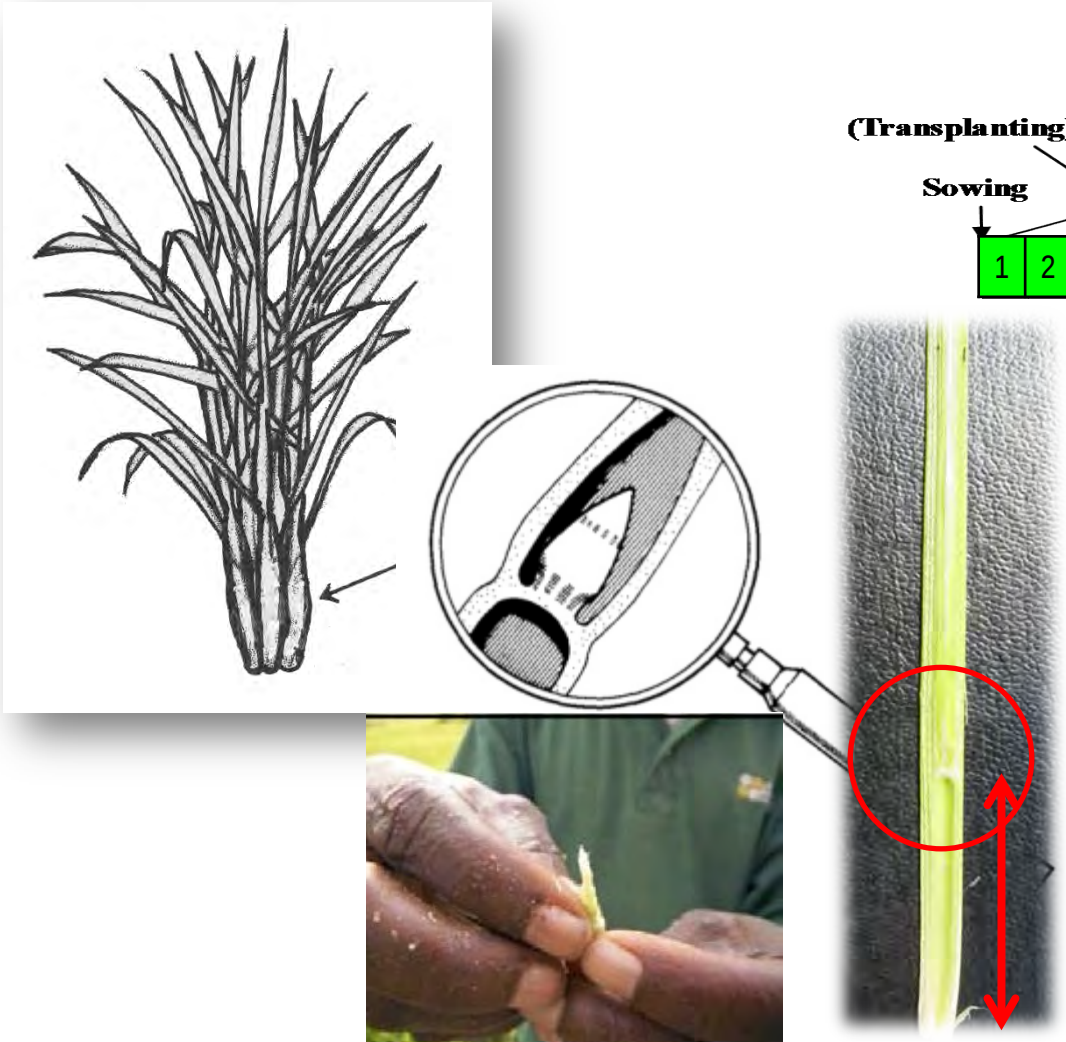
Birds



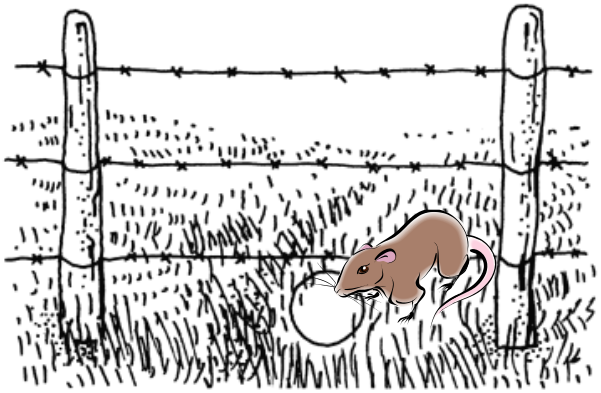
Leaf-scald



Panicle initiation and Top dressing



Rats



Damaged by weaverbirds

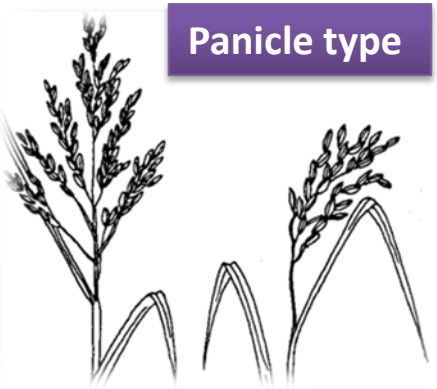
Purifying seed

Height

Leaf, culm, grain color

Panicle exsertion

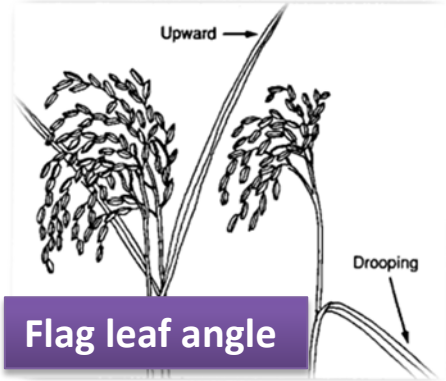
Panicle type



Heading time

Leaf angle

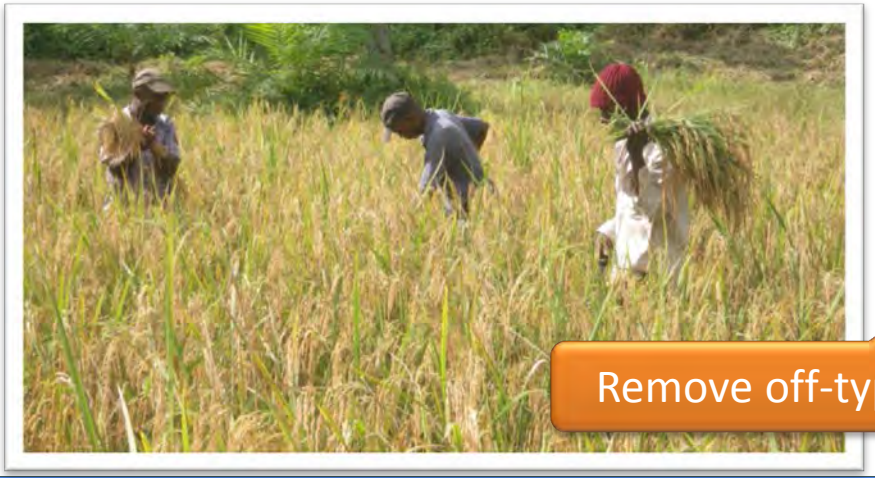
Flag leaf angle



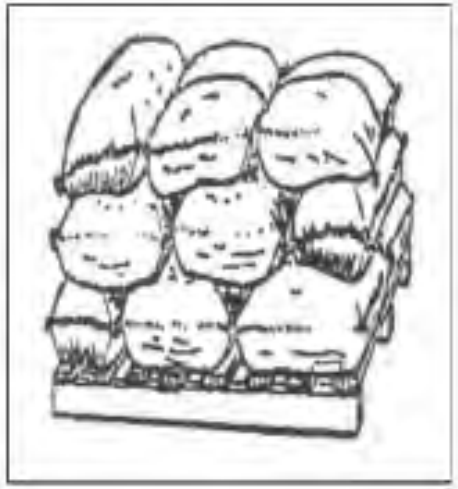
Awns

Gain shape

Source: Purifying seed through roguing; IRRI; 1988



Remove off-type plants



Keep cool and dry until next season

Keep rice sacks on wooden pallet

Dry once a month

Over ripened

Immature

Harvest your rice at right time!

Dry grain on tarpaulin or drying floor

Store well-dried and winnowed grains in proper ways