

FARM AFRICA

Technical Guide to Transplanting of sorghum and millet.

Advice for Extension Agents
introducing the technique to new
areas.



Contents

Notes for Extension Agents

Implementation.

1. The Idea
2. Nurseries
3. Transplanting

Checklist of elements critical to
the success of transplanting

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Notes for Extension Agents

1. Five farmers should be selected whenever the technique is introduced to a new operational area.
2. Start with farmers around Alek, in good growing areas where there are serious farmers.
3. Ask the local chief to call the farmers together.
4. Explain the purpose of the new technology (transplanting).
5. Ask the farmers to select 5 to test the system (peer group selection).
6. They should be selected according to the checklist and a willingness to volunteer.
7. Ideally farmers should be visited three times at nursery stage and three times at main plot stage.
8. Three **Field Days** should be held at the farmers' fields so that the technique can be introduced to other farmers, preferably one at nursery stage, one at flowering and one at harvest.
9. A post-harvest discussion workshop should be held with all the farmers involved to discuss any problems or improvements to the technique.
10. When visiting farmers critical points to check for are:
 - Thinning is done correctly in the nursery and plants are not too close together.
 - Nurseries are secured from animal damage, including using old mosquito nets to keep off birds/insects.
 - Nurseries are staggered at the correct times (10 days apart for early sorghum, 20 days apart for late crops).
 - The direct-sown plot is sown when the farmers would normally direct-sow.
 - Seedlings are only transplanted after heavy rains and in the evening.
 - Seedlings of the correct age are transplanted (15-20 days old for early millet, 30-40 days old for late crops).

Implementation

1. The Idea

Transplanting brings forward the harvest by growing seedlings in irrigated nurseries for three to four weeks before the rains begin.

Advantages are:

- less dependence on the length of the rainy season
- a harvest some 10 – 15 days earlier than direct sown crops.

Using a series of nurseries provides a stream of plants in case the rains are late.

As the greatest damage from heavy *striga* infestations occur pre-/post-emergence, transplanting 3 – 4 week old sorghum into infected areas gives the plants a distinct advantage over germinating seeds in the same plot.

2. Nurseries

Site Selection

- Near a perennial water-source for watering nurseries before the rains start (shallow well, stream, *toic*).
- In a securely fenced area or existing garden to prevent damage to seedlings by animals.
- Away from termite infested areas.

Construction

- Pilot nursery should be 1m² for a plot in the field of 10m x 10m.
- Bund the nursery to prevent water draining away.
- Mix soil for the nursery to include loamy soil and well-matured compost or goat/ sheep/cattle dung from the *luak*.
- If termites are a problem the nursery should be surrounded by wood ash.
- Shade the emerging seedlings with *dom* palm leaves, reducing the shade as the plants grow.
- Use old mosquito net to protect young plants from birds/insects.

Sowing

- Amount of seed required for a 1m² nursery is equal to one full matchbox.
- Sow in 10 evenly spaced rows.
- Thin plants in rows to 1 cm apart for early sorghum (1000 plants /square metre), 2 cm apart for late crops (500 plants /square metre).

Watering

- Light watering from a watering can or a Milo- tin twice a day morning and evening.

Weeding

- Weed as necessary to keep completely weed free

Repeat the nursery establishment every 10 days for early sorghum and every 20 days for late sorghum and millet.

- Several nurseries should be established that make sure seedlings of the right age for transplanting are available when the rains begin.

2. Transplanting

Main plots

- Two plot areas of 10 m x 10 m should be measured out by pacing. They should be next to each other on land of similar fertility and soil type.

Transplanting

- Transplant seedlings into one of the plots in the evening after heavy rains using a recommended spacing for the area.(7-9 plants m²)
- Transplant early sorghum seedlings at 15-20 days old and late crops at 20-40 days old.

Direct-sown plots

- The second plot should be direct-sown as normal **at the time the farmers normally sow their crops.**

Observations

- Extension Agents and farmers should observe differences between the transplanted and direct-sown plots and record them where possible, paying particular attention to;
 - Stand establishment
 - Stem thickness/greenness
 - Level of *Striga* infestation
 - Size of heads
 - Flowering/maturity dates
 - Final Yield – grain and straw.

Checklist of elements critical to the success of transplanting

1. Reliable perennial source of water must be available for nurseries.
2. Water source must be conveniently situated for watering nurseries.
3. Either sorghum, millet, or both should normally be grown by farmers; this is a technique to be used by sorghum and millet farmers, it is not a package for introducing sorghum and millet into new areas.
4. Labour must be available for transplanting seedlings from nurseries to the field.
5. Field plots should be fenced to keep off cattle, sheep and goats. There will be no other grass or green plants in the fields when the transplanting is done so the plots will be very attractive to animals/herders and birds.