

Manual for the on-farm trial

Revisiting the subject of on-farm trials

Need to put the manual for breeding protocols on the Knowledge Portal

Why do we do on-farm trials---

Need to get farmer input

Also may be a part of the formal release process

Range of variation—

of trials ranges from zero to 171 per year ...

Silver:

How do the varieties perform under farmer management

Breeder get more feedback on farmer preferences

Farmers are also exposed to varieties and the experimentation process

Interacting with researchers also gives them something extra

- A. Exploratory visits to the areas --- for site selection
 - a. Interact with community leaders --- try and bridge the gap..
 - b. Schedule a meeting....
- B. Second visit
 - a. Hold meetings making sure the objectives & make sure farmers have correct expectations
 - b. Ask for farmer input on what they think will work
 - c. Find out if there is sufficient land; interest;
 - d. Plan of action & setting of the planting date
 - e. Set out criteria on why you are going to work with certain farmers
 - i. Available land
 - ii. Variation in agro-ecological conditions
 - iii. Decide on groups vs individuals
 1. Uganda usually works with groups
 - iv. Agree on the design....
 1. Let farmers be involved in design?
 - a. However, shouldn't there be a standardized design
 - v. Minimum of 24 sq meters... 4 rows, each measuring 6 meters...
 - vi. Spacing: traditional.... 3 to 5 varieties with local check...
 1. With mound: 3 vines on top of the mound
 2. Or in ridges...
 - f. Researcher guides..... but farmer does the work.
 - g. Replication by farmers; not replicate on the same farmers field
 - i. Use 4 to 10 farmers as duplicates
3. Third visit: Planting
 - Let them know how often you will visit....
 - Do not just show up at harvest... sometimes do not weed because are "waiting for you"
4. Fourth visit
 - Encourage farmers to make their own observations

Observe the plant vigor, maturity time, susceptibility to disease

5. Final evaluations

Field evaluation

- Planting material
- Disease resistance, esp. SPVD
- Weevil "resistance"
- Drought
- Root shape
- Yield
- Flesh & skin color

Consumer acceptance evaluations....

- Cooked samples.... Appearance before tasting
- Observe diff characteristics: taste, starchiness, fibrousness

At least 20 farmers as a starting point: Men as well as women...

Use to give them sheets, with each point having a range of 1 to 5...

Need to explain

- Don't need to take your neighbor's decision...
- There is no right or wrong...

When variety is better than the standard check?

- Is it similar to the standard check?
- Or performing below the standard check...

Green card: ABOVE standard performance

Equal: Yellow card

Red card: Below standard performance..

Label cards for men and women differently...

Go through trait by trait.... Using cards..

- Multiple cards needed for each variety... for each trait
- Put an M on the cards that men will use..

What about catching age effects?

Mother field: managed by a group: with all of the varieties

Baby fields: 3-5 new varieties with local check

6. Now you have your cards...

Enter the data onto the form...

In Uganda, concentrate the evaluation of the mother plot...

Can only handle easily one plot a day.. Occasionally 2 per day..

Need three technical staff.

Hold a pairwise ranking session at the end with the group...

Pick up one and compare them one by one to the others

Then move to the next and compare them one by one to the others..

Can be a time to suggest possible names

Why pairwise compared to voting for the way that varieties rank..

Malawi: one a day... harvesting plus cooking: one per day..

How do you get information from the babies....

If collecting from baby plots... how much staff are involved...

For the on-farm trials, do we need to have a national check in addition to a local check?

Very challenging when you have many entries..

How do we manage that?

How do you incorporate the info you get from the baby plots?

Need for best methods of analysis?...

Participatory varietal selection at one end...

Participatory breeding if bring in earlier...

How did this evolve....

Because farmers were rejecting the varieties..

But now wanted to invent a method....

Witcomb in Wales: Mother-baby trials....

??or highly client-oriented plant breeding ...

Informal designs:

Distribute small packets of seed to many, many farmers

One variety given out in a village...

Then have a group meeting in the community....

To assess what they feel...

Some countries have pre-determined local checks..

Maria:

Find farmers within a 10 kms radius to find farmers willing to participate

Had 64 clones in 4 major locations

Each neighboring farmer took 4 varieties (16 varieties) + their local check

Evaluate at 2-3 months

At harvest take the yield, cook roots.

Jan: number of farmers... is 20 too few; Also, can we hold up cards and count? Or use sacks to collect?

Jane Ininda:

AGRA gets funds from BMGF, Rockefeller, DFID, Howard Buffett & SIDA

2006: PASS has \$150 million; soil health: 180 mill; added value/out markets \$25 million

Starting Genomics/advanced science & water management..

Targeting 15 countries: added Liberia & Sierra Leone recently;

Breeders: must develop and release varieties for specific agro-ecologies in their countries

Must have farmers participatory—demonstrations/field days

Must link up with seed enterprises..

Support start-up seed companies and agro-dealer networks & stockists (increase seed access)

Link to equity funds to attract loans

Training: MSc in progress: 150; 14 finished

PhD: 118 in progress; 36 graduated

Crop improvement: 222 varieties released, 178 commercialized

Breeder & foundation seed: 3,000 MT

120,000 demonstrations

600 field days..

Seed production

70: 33,000 mt

Cassava & sp cuttings: 14 million

Demonstrations 4,700

Field days: 622

Seed retain:

Value of loans \$32

10,000 agro-dealers trained

Field days: 2000

Seed sales: 373,000 mt

Fertilizer sales 780,000 mt

Releases:

Maize: 70:

SP: 19

Cassava: 40

1.6 million invested in SP breeding

Seed production:

Kenya: Creadis \$400,00

DARS: Malawi: dept of ag research is doing sp & cassava: Benasi gave to???

Masters: in plant breeding

Ghana: Pearl Kpotor, Victor AMankwaah

Nigeria: 1 Mustapha Danjumsah

How is AGRA looking at clonally propagated crops..

Different model: seed companies not that interested...

Farmer-to-farmer training

Zanzibar--- cassava farmers are trained & certified as seed producers..

In USA: Demonstration that early demonstration vines: higher quality roots & overall total yields from high quality vines... 5-10% increases....

3. Application of heterosis

Still no results for the nutrient analysis... but dry matter only shows heterosis for best offspring.