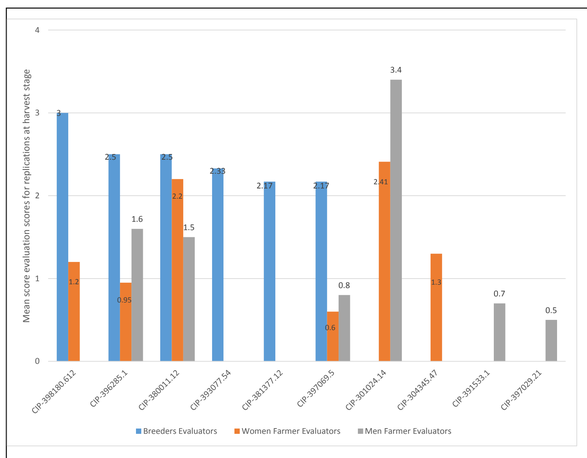
Experience and guidelines for PVS: Integrating gender and potato breeding

Background

Participatory research involving both men and women is increasingly being used as a way to promote adoption and upscaling of technologies. Excluding farmers from decision making regarding varieties is blamed for the low adoption rate of released varieties. This is because researcher or breeder criteria may overlook certain growers, market and end users preferences. Adoption of varieties may increase if farmer and consumer preferences are known and taken care of during breeding. As a result of different roles and different access to resources, men and women may also have different trait preferences. Thus it is also important to understand any similarities and differences between men and women's preferences so these can be taken into account during breeding to ensure that they both benefit.



Top 6 selected clones by breeders, men and women farmers at harvest time in Amhara, Ethiopia

The top clone selected by both men and women as their best clone (CIP-301024.14) was rejected by breeders. Breeders noted that for this clone, because more than three tubers were cracked this showed possibly lack of tolerance to dry spells and susceptibility tuber blight. This discrepancy between farmers and breeders in terms of evaluation may call for the need to also use trained farmer panels in the evaluation of clones since farmers may not know what to look for during evaluations. Farmer criteria may in some cases be limited. In some cases women overlooked disease resistance for other culinary traits

The International potato center developed an M&B methodology and user guide to help improve the the interaction and feedback between breeding programs and users of candidate potato varieties. Specific objectives of the user guide are as follows:

- Capture male and female farmers' desired traits (i.e. features, attributes and preferences) that they look for in new potato varieties
- Characterize potato variety preferences by region
- Provide a common methodological basis for all partners involved in PVS.

Activities: Evaluation stages

1. Vegetative development:

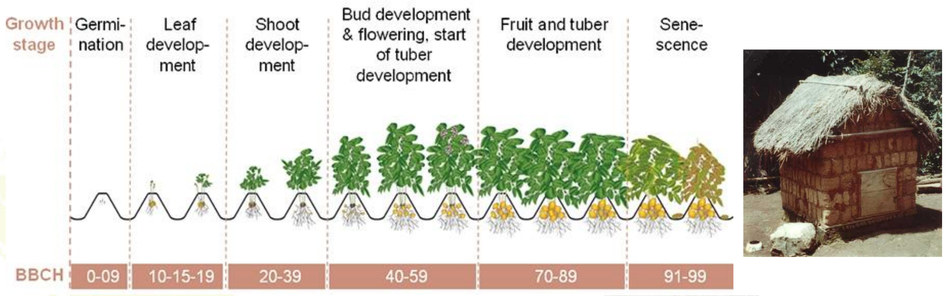
- Identification selection criteria
- Ranking selection criteria

2. Harvest:

- Evaluation tuber yield
- Identification selection criteria
- Ranking selection criteria
- Organoleptic evaluation

3. Post-harvest: 45 days and 90 days

- Sprouting & weight loss
- Identification selection criteria
- Ranking selection criteria



De Haan, S; Salas, E.; Fonseca, C.; Gastelo, M.; Amaya, N.; Bastos, C.; Hualla, V.; Bonierbale, M.2017 Participatory Varietal Selection of Potato (PVS) using the Mother & Baby Trial Design: A gender-responsive trainer's guide. Lima (Peru). International Potato Center. 82pp

Mudege, N.N., Salas, E., De Haan, S., Bonierbale, M., Mendes,T., Amele, A. Gender and Breeding Meeting, Nairobi

5-6 October 2017

Methods: Integrating gender

Identification and ranking of selection criteria

Identified Criteria	Score Men (# of corn kernels)	Rank	Score Women (# of bean seed)	Rank
High Yield	49	1	30	2
Free from pests/ disease and insect resistant	49	1	14	3
Long storage	9	5	31	1
Good taste	15	3	12	5
Not watery			14	3
Stable at cooking/ good peeling/not watery at cooking	6	7	5	7
Colour either red/white			11	6
Many eyes on tuber	11	4		
Bigger Tuber size	7	6		
Good cooking quality			5	7
Moderate size			4	9
No hole inside			3	10
No deep eyes			2	11
Early cooking time	1	8		

Ranking criteria selected by men and women in separate groups in Amhara Ethiopia

- Invite equal numbers of men and women to participate in the evaluation exercise
- A sex disaggregated analysis will not make much sense if very few men compared to women or very few women compared to men participate
- Invite participants from different socio-economic categories to evaluate clones
- Depending on the community, you may need to ask women to evaluate first before men to avoid women being influenced or pressurized to select certain varieties
- Separate farmers into their sex groups for the evaluation to ensure that both men and women's voices are heard
- When farmers are hosting demonstration plots, recruit both male and female farmers to host demonstration plots because men and women have access to different resources (including quality of land and inputs) so may prefer different traits
- Farmers may wish to associate with / ask questions from same sex farmers

What happens when a woman and a man from a male-headed household have conflicts in selection of varieties?

One of the goals of PVS is to provide farmers with a basket of choices. Care must be taken to be clear that it is not possible to provide each and every man and woman their own choices. The aim is to select varieties that are more commonly preferred in the community. If there is clear preference variation for men and women for particular variety in a community then we should look for options making available the preferred variety by both parties in a community. By doing this PVS can contribute to restore or increase on-farm diversity of germplasms in a particular community.

Limitations

- Collecting statistical information will not be able to answer why varieties are preferred by men or by women. This needs to be accompanied by qualitative data collection.
- Farmers may not have knowledge about how pests and disease present so they may choose susceptible clones. There may be need for trained farmer panels who are able to identify potential problem areas while also selecting for traits that are preferred in communities
- Not possible to conduct organoleptic tests with many clones because farmers may suffer from fatigue and over sensory stimulation. However for visual selection its possible evaluate more clones. Breeders can also consider data collected in previous selection PVS activities