Participatory breeding of organic cotton in India: Understanding farmers’ cultivar preferences

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Introduction

Cotton (Gossypium spp.) is an important natural fibre whose conventional production is responsible for environmental degradations.

- One of the main concern of organic cotton production is the availability of GMO-free varieties adapted to the organic production systems.
- One approach to develop a portfolio of suitable varieties is Participatory Plant Breeding (PPB), i.e., breeding involving farmers.

Objectives

- Identify cultivar traits farmers have when selecting cotton species G. hirsutum and traditional G. arboreum.
- Rate criteria of farmers in selecting cotton cultivars.
- Improve the participatory plant breeding methodology used.

Methods

- Interviews with male and female farmers or farmer groups in India in 2019.
- 53 open ended interviews with farmers on their criteria in varietal selection.
- Categorizing the mentions.
- 126 structured interviews where farmers rated a set of pre-selected criteria for varietal selection.

Results

Male and female farmers’ selection criteria for G. hirsutum and G. arboreum

Conclusions

- New criteria for cultivar selection were mentioned by farmers.
- Closed question give qualitative information, but only on a small set of criteria.
- Open questions allow to quantify the importance of criteria by counting mentions.
- Open questions allow to quickly integrate new criteria farmers have, when adapting to changing conditions.
- Open questions allow a feedback on exposure to novel germplasm.

References