



Tropentag, September 11-13, 2024, hybrid conference

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Unlocking farmer-preferred multipurpose forage mixtures: A tricot approach in Ethiopia

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Abstract

Farmers' insights are crucial for widespread adoption of new agricultural technologies. This study employed the Tricot approach, where farmers directly compared three sets of technologies under real-field conditions. The method, popular for food crops in small-scale farming, was adapted for forages in Ethiopia.

Across two regions with contrasting mid-altitude environments (Amhara and Sidama), we engaged 600 farmers in two cycles. The goal: identify a forage mixture offering both livestock feed and land restoration benefits. Fourteen treatments were evaluated, including monoculture grass and legume varieties, as well as their mixtures. Through randomisation, each farmer received three treatments.

District agricultural officers were trained on managing each forage species (land preparation, weeding, harvesting) and using digital data collection tools. They then assisted farmers throughout the experiment. Farmers were encouraged to observe and record their experiences throughout the establishment and harvesting phases. This allowed them to rank the varieties based on traits and performance and identify their preferences from most favourite to least favourite within their assigned set of three.

While preferences varied across regions, the overall favourite combination emerged as *Panicum cv Mombasa*, *Brachiaria* hybrid Cayman, *Desmodium intortum*, and *Stylosanthes Hamata*. Notably, soil cover and erosion reduction were key factors influencing this preference. The preference ranking likely reflects the most probable choices for adoption by livestock and forage producers in the study areas and potentially in similar environments.

The scaling of multipurpose forages and their mixtures could be linked to land restoration efforts at different scales to ensure availability of land to produce forages, especially through area closures and rehabilitation of degraded range lands. Improving national forage seed registration systems would be critical to ensure the availability of planting materials.

Keywords: Citizen-science, ethiopia, forages, mixtures, restoration, tricot