



Tropentag, September 11-13, 2024, hybrid conference

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Participatory forage evaluation for integration in mixed crop-livestock-tree systems in Lao PDR: An entry point for sustainable intensification

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Abstract

In Lao PDR, smallholder farmers dominate agriculture and food production, mainly relying on rainfed, low-input crop and livestock production. Livestock production in Laos has notably increased in the past decade, with the country's cattle population growing from 1.7 million in 2012 to 2.3 million in 2021. This upward trend suggests a continuous rise in livestock numbers, aligning with the government's efforts to boost cattle production in response to the growing demand. However, despite smallholders being the main players in livestock production, inadequate feed quantity and quality pose a significant challenge, particularly in the dry season. Cattle are typically raised in extensive systems, relying on natural/naturalised pastures and low-quality forages as the primary feed source. To fully leverage the potential for the regional market and enhance smallholder livelihoods, addressing the issue of inadequate feed is crucial. In the frame of the CGIAR initiative on Mixed Farming Systems, a farmer participatory evaluation of forages was conducted in different parts of Laos, to provide farmers with forage options for integration into their farming systems. Demonstrations farms with thirteen forages, including eight grasses and five legumes, were established in Mok (North), Naxathong (Central), and Thateng (South) districts. Farmer field days were held with a total of 90 farmers, 30 from each district, who assessed forage growth, biomass production, and pest/disease incidence using a scale of 1 to 4. Farmers across three districts reported an overall preference for forage grasses over legumes, likely due to the higher biomass of the grasses. The most preferred grasses were *Urochloa* hybrids for their fast growth, high biomass production in both the wet and dry seasons. For the legumes, Ubon stylo was scored as the highest in terms of farmers' preferences. Although the evaluation is ongoing, initial results indicate the potential for selecting and integrating high-quality and resilient forage materials into farming systems to enhance livestock productivity, improve livelihoods, and offer environmental benefits. Moreover, establishment of seed systems is crucial to enable farmers to access their preferred varieties. Collaboration with national and local partners, the private sector, and farmers is essential to ensure sustainability of the seed supply chain.

Keywords: Feed, forages, livestock, participatory evaluation