Evaluation of improved forage varieties in Mai Son district, Son La province, Vietnam

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BACKGROUND

Challenges Faced by Farmers:

- Limited knowledge on suitable forage types, management practices, and utilization.
- Low productivity due to reliance on native/naturalized pastures, crop residues, and communal land grazing.
- Feed-related issues such as low-quality forages (mainly overgrown Napier, Cenchrus purpureus) and winter feed shortages.

Location: Mai Son district, Son La province, Vietnam, a region with typical northern mountainous terrains and climatic conditions.

Objective:

- Evaluate the potential of improved forages that are well-suited to local soil, climate, and farming conditions to address winter feed shortages and ensure year-round feed availability.

METHODOLOGY

Experimental Design: Eight forage varieties, including grasses and legumes, were evaluated. These varieties were selected based on their potential to thrive in local conditions and improve feed productivity. The selected varieties included green elephant grass (VA06), Mun River guinea, Mombasa guinea, rice bean, and stylo.

Data Collection: Data on growth, yield, pest and disease incidences, and farmers' evaluations were collected. This included both qualitative and quantitative data to provide a comprehensive assessment of forage performance.

Soil Sampling: Soil samples were collected from the experimental sites and analyzed for key properties, including pH, organic matter content, and nutrient levels. This helped in understanding the soil's impact on forage productivity.

KEY FINDINGS

Soil Properties: The soil at the experimental sites varied in properties, affecting forage growth. Soil at experimental sites is acidic (pH 4.84 to 5.15) with low cation exchange capacity (1.48 to 1.81). The results indicated that certain forage varieties were better suited to the local soil conditions.

Growth and Development of Forages:

- Mun River Guinea, Mombasa Guinea, Green Elephant Grass (GE), and VA06 showed rapid growth and high biomass yields, especially in the dry season.
- Rice Bean yielded high biomass but requires annual replanting, whereas Stylo showed slower growth but is a durable perennial option.
- **Seasonal Performance:** Green Elephant Grass (VA06), Mombasa Guinea, Mun River Guinea maintained steady growth and productivity across seasons, while Rice bean and Stylo exhibited significant seasonal variability. This information is crucial for planning forage cultivation to ensure year-round feed availability for livestock.

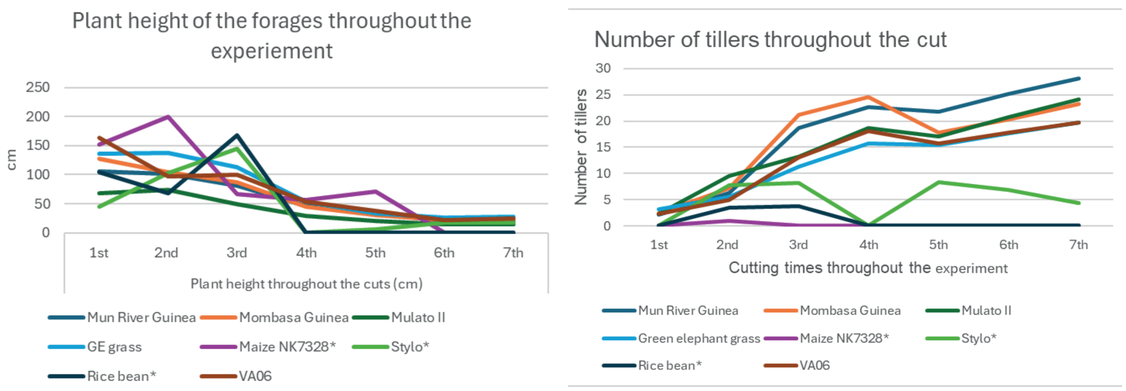

Figure 1. Growth of forages in the experiment sites.

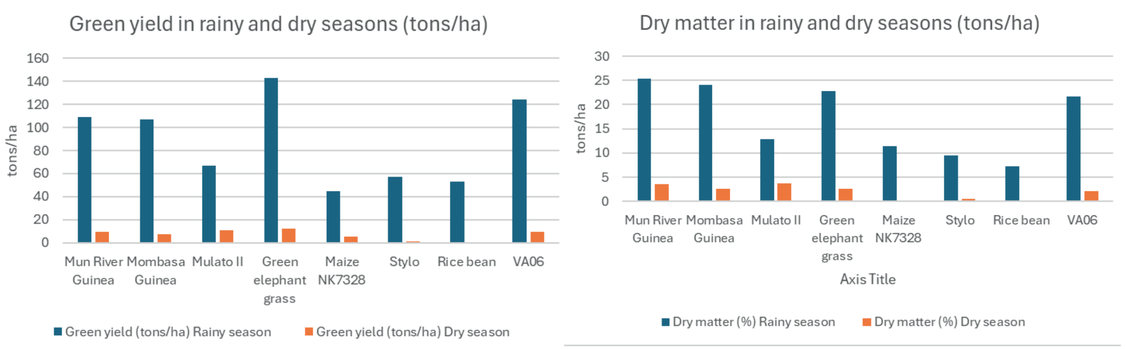

Figure 2. Fresh and Dry Yields of Selected Forages.

Pest and Disease Incidences: The study monitored pest and disease incidences across different forage varieties. The findings indicated that while some varieties were more susceptible to specific pests and diseases, others demonstrated resilience. This information is crucial for selecting forage varieties that require minimal pest and disease management.

Table 1. Pest and Disease Incidences

FORAGE VARIETY	PEST INCIDENCE (%)	DISEASE INCIDENCE (%)
VA06	10	5
Mun River	12	7
Mombasa	15	10

Farmers' Evaluations: Feedback from local officials and farmers was overwhelmingly positive, particularly for the grass varieties that demonstrated high yield and resilience. Training and capacity-building activities were instrumental in enhancing local knowledge on forage cultivation and management, contributing to the overall success of the initiative.

- **Training Impact:** Increased knowledge and skill in forage management.
- **Adoption Rate:** High willingness to adopt new forage varieties.

FUTURE DIRECTIONS

Expand Forage Varieties: Continue to evaluate and introduce new forage varieties that are resilient to local conditions.

Enhance Training Programs: Strengthen training and capacity-building initiatives to equip farmers with the knowledge and skills needed for effective forage cultivation and management.

Monitor and Manage Soil Health: Regular soil health assessments to ensure optimal conditions for forage growth.

By addressing these areas, the CGIAR Initiatives can improve the sustainability and productivity of livestock farming in Son La province, ensuring better outcomes for farmers and the environment.

ACKNOWLEDGEMENTS

This work was undertaken as part of the One CGIAR Initiative Sustainable Animal Productivity (SAPLING) and Initiative Nature-positive Solutions (NATURE+). We thank all donors that globally support through their contributions to the CGIAR system.

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POSTER PREPARED FOR
Tropentag 2024
September 11–13, 2024
Vienna (Austria)