



Forage grasses evaluation in different agro-ecological zones in Tanzania

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INTRODUCTION

- Tanzania has amongst the largest cattle population in Africa (Burkart and Mwendia 2024).
- Productivity has remained relatively low as in most sub-Saharan Africa. Tanzania is characterized by limited forage cultivation essentially key in bridging the roughages gap (Maleko et al. 2018).

OBJECTIVE

To assess productivity of selected forage grasses in lowland and semi-arid zones in Tanzania.

RESULTS

Lowland site produced significantly more dry matter than in the semi-arid sites as expected. Cayman forage type accumulated most dry matter yields and Massai the least in both sites (Figure 1). Okapi and Cayman presented better quality on digestibility, metabolizable energy and crude protein (Table 1).

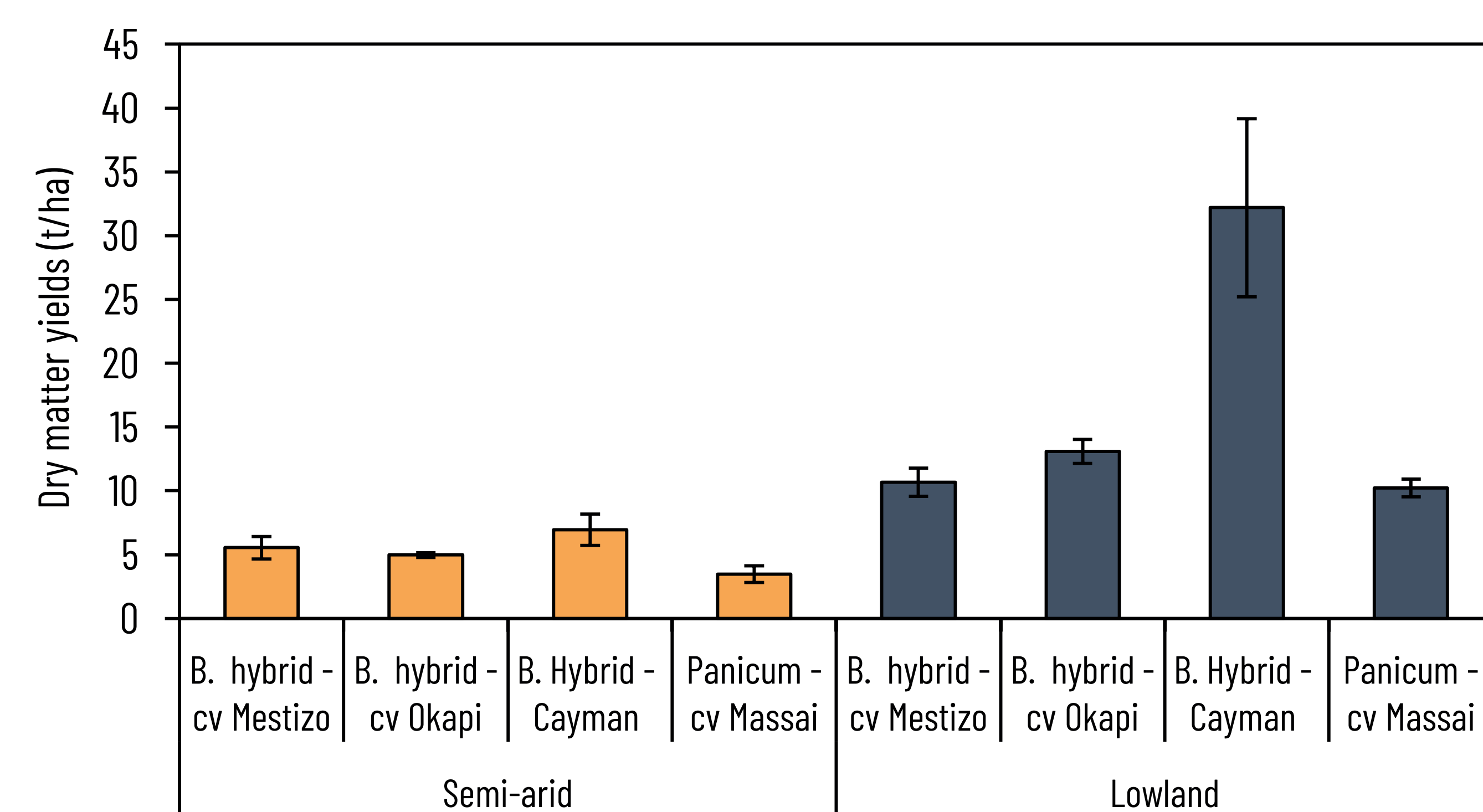


Figure 1. Three cuts cumulative dry matter yields (t/ha) for four forage types in semi-arid and low-land sites in Tanzania in 2024.

MATERIALS AND METHODS

- Tested selected/bred forage grasses in two agro ecological zones in Tanzania namely Mpwapwa site (Semi-arid) and Tanga site (low land).
- Test forages were planted following Complete randomized Block Design and replicated three times at each site.
- Over three growth cycles we measured dry matter yields and root biomass.
- We analyzed nutritional Crude Protein (PC), Neutral Detergent Fiber (NDF), Metabolizable Energy (ME) and digestibility.

Semi-arid site accumulated more root biomass than the lowland with Mestizo, Okapi, Cayman and Massai in that order, similar to low-land site except for Mestizo, Okapi and Massai had similar amounts (Figure 2).

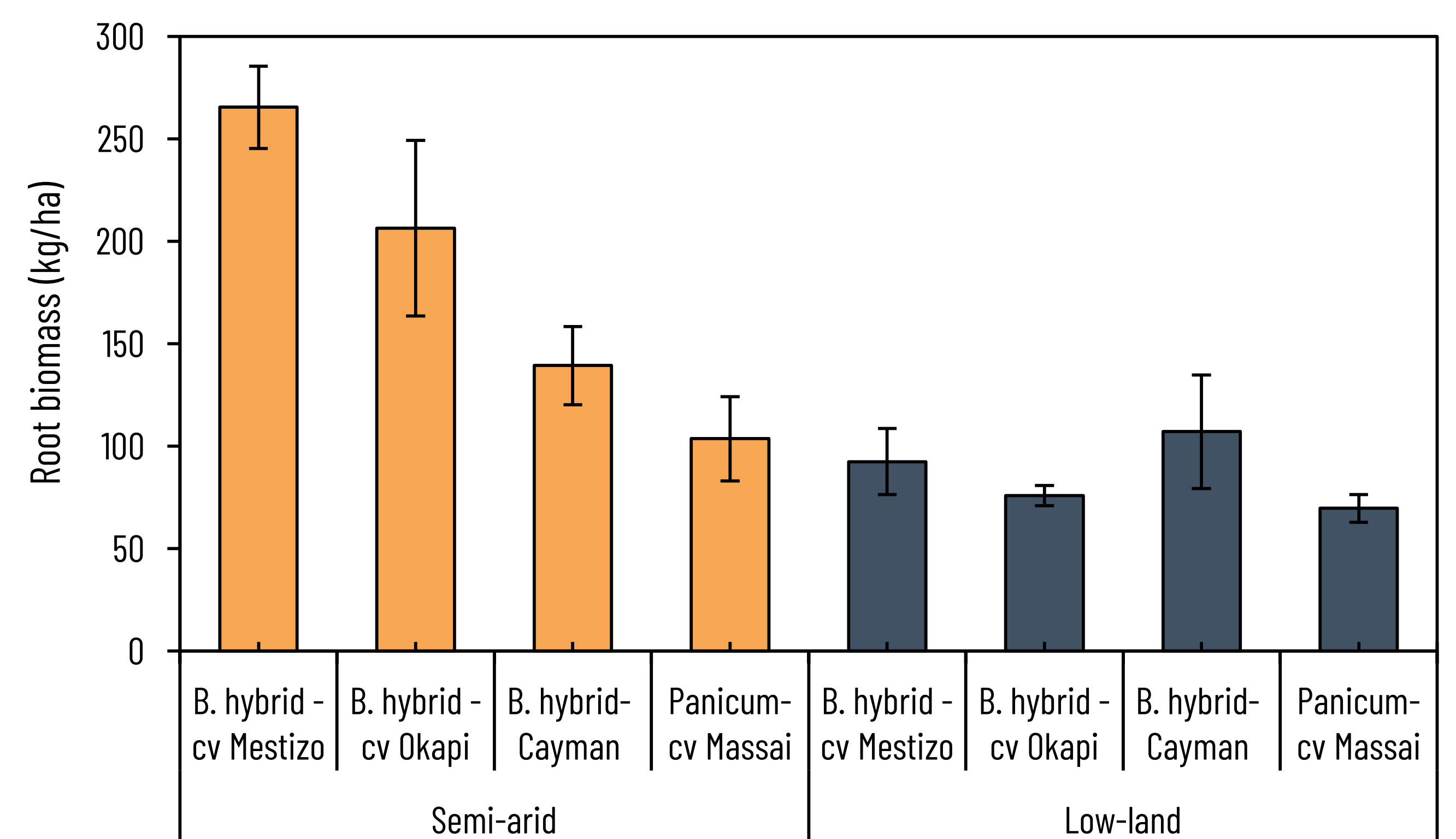


Figure 2. Root biomass(kg/ha) for the four forage types in semi-arid and low-land areas in Tanzania in 2024.

Table 1. Nutritional quality results for four forage types grown in semi-arid and low-land sites in Tanzania in 2024.

Site	Forage type	CP (%)	NDF (%)	ADF (%)	Me (mj/kg)	Digestibility (%)
Semi-arid	Urochloa - Okapi	15.2	57.4	30.8	8.41	59.4
	Megathyrus - Massai	11.7	69.7	41.3	7.62	53.5
	Urochloa - Cayman	11.5	59.6	33.6	8.08	56.5
	Urochloa - Mestizo	12.3	58.8	32.9	7.77	55.2
Low-land	Urochloa - Okapi	14.5	53.6	30.7	8.15	58.5
	Megathyrus - Masai	13.1	58.1	38.6	7.39	53.3
	Urochloa hybrid Cayman	15.0	50.1	30.3	8.00	58.3
	Urochloa hybrid Mestizo	15.0	54.2	32.3	7.96	57.3

CONCLUSIONS

- These results show potential adaptability of the test forages in different agro-ecological zones, and therefore need to match forage type with environment.
- Based on the larger root biomass accumulation of the grasses, in the order Mestizo>Okapi>Cayman>Massai is also likely to suggest the order of perseverance of the grasses in the semi-arid conditions but this would require follow up.

REFERENCES

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ACKNOWLEDGMENTS

This work was conducted as part of the CGIAR Sustainable Animal and Aquatic Foods (SAAF) Science Program. We thank all donors who globally support our work through their contributions to the CGIAR System. CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis.



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POSTER PREPARED FOR:



Tropentag 2025
September 10 - 12, 2025
Bonn (Germany)