Adopting improved forage grasses and legumes for semi-arid zones in Tanzania

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Key Messages

- Meat and milk are important source of protein in human diets.
- The shortage of feed particularly during dry season is one of the major factors limiting livestock productivity in Tanzania..
- Improved forages (grasses, herbaceous legumes and fodder tree/browses) show great potential to alleviate this problem.
- Ever increasing demand for more meat and milk calls for forages varieties which are high yielding, more adaptive and environmental friendly.
- Researchers and development partners are devising forage varieties that when fed as basal or in combination basal diets will potentially improve productivity and reduce GHG emissions**.**
- Some of these potential forage varieties need to be widely disseminated, farmers sensitized and seeds made available .

Objectives and Approach

- In participatory manner identify niches for forages and set priorities for forage development in target sites
- Screen, adapt and promote appropriate elite forage accessions targeting the different agro-ecologies, farming systems and niches
- Build capacity of target beneficiaries in forage technology (agronomy, seed system)
- Study Sites/ Multi-location Trials
  - Agro-pastoral/ pastoral –Semi Arid /Sub humid areas (Dodoma, Mwanza)
  - High Potential areas –Highlands –Intensive/Zero grazing (Mbeya; Tanga; Killy)
- Forage species validated for adoption in semi-arid/sub-humid areas:

Grasses: *Cenchrus ciliaris, Eragrostis superba* and *Enteropogon contortus*

Legumes: *Clitoria ternatea, Neonotonia wightii, Macroptlium atropuperium, Lablab purperius*

Key results for dairy and beef livestock keepers

Table 1: The biomass yield of *Cenchrus ciliaris* (CC*), Eragrostis superba* (ES) and *Heterpogon contontus* (HC) (t DM /ha)

Species	Height of plant (cm)			Growing season
	15	30	60	
Cenchrus sp	0.042.4 ±26.2c	0.11 ± 40.2b	1.0±41.3a	12.2± 62.2
Eragrostis sp	0.037.2 ±40.3c	0.14 ±60.2b	0.85±56.4a	0.99 ± 23.1
Heter. spps	0.076 ± 36.5c	0.14 ± 67.3b	0.76±68.2a	0.9 ± 45.5

- Significant difference was observed in Biomass yields at different grass height in all the grasses (P <0.05)
- I ha of *Cenchrus ciliaris* (Buffel grass) can keep 1 TLU for one year under good management or 1 dairy cow with reasonable normal supplementation

Table 2: The herbaceous legumes biomass yield of *Clitoria ternatea, Neonotonia wightii* and *Macroptlium atropuperium, Lablab purperius* (kg DM /ha)

Specie	Biomass Yield (t DM /ha)	CP% (130 days)	Seed Yield (t/ha)
Neonotonia wightii	5.23 ± 14.1	13.2	0.702 ± 20.1
Lablab purpureus	5.82 ±35.5	15.6	1.241 ± 51.3
Macroptilium atrop.	4.4 ± 26.3	13.8	0.282± 35.5
Clitoria ternatea	3.2 ± 32.2	17.1	0.642± 32.8

- Herbaceous legumes have potential to be established in grass-legume mixtures as they increase quality and total biomass yield,
- Legumes play considerable role in livestock-crop farming and environmental health

Opportunities for inclusive investment and scaling up

➥There is a need to delineate where Public and Private sectors can and need to Invest, to encourage Private investment in Forage seed (FS) and Planting material (PM) enterprises, and Public Investment or PPPs in specific FS and PM value chains

CONCLUSION

➥The observed Potential forage varieties need to be multiplied and disseminated.

➥ In this regard involvement of both private and public partners will enhance impact on increased productivity and environmental health.

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