Comparative yield performance and fodder quality of Napier grass in Northern Ghana

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Key research activities

- Piloting fodder production for supplementary irrigation
- Training farmers in fodder production
- Exploring outscaling of potential for fodder irrigation in Northern Ghana

Results and main findings

- Promising Napier grass varieties tested in northern Ghana for animal and farmer preference.
- Dry matter yields ranged between 1354 to 3339 kg/ha
- While all the cultivars showed some potential in terms of biomass yield, plant height and tiller number the Local cultivar and 16837 proved to be superior considering the climatic zone in which the study was conducted (Table 1; Figure 2).
- The cultivation of the Local cultivar and 16837 is recommended among smallholder livestock farmers and forage sellers within the savanna zone.
- The installation of small scale irrigation systems could help improve the biomass yield.

Implications of the research for generating development outcomes

There is need to introduce small-scale irrigation and rainwater harvesting structures for fodder production to improve animal and household nutrition.

How this work would continue in Africa RISING phase 2

- This work will continue through use of low-cost irrigation technologies and water harvesting technologies for dual-purpose fodder production.
- The irrigated forage production for seed will also be done in phase 2 of Africa RISING especially on dual-purpose fodder.

Current partnerships and future engagements for out scaling

- CGIAR Centers: IITA, ILRI
- Universities: UDS
- Research Institutes: ARI
- USAID Projects: ATT
- Farmer Based Organizations

Photos (a) and (b): Farmers planting fodder (top) and one of the farmers harvesting fodder in northern Ghana

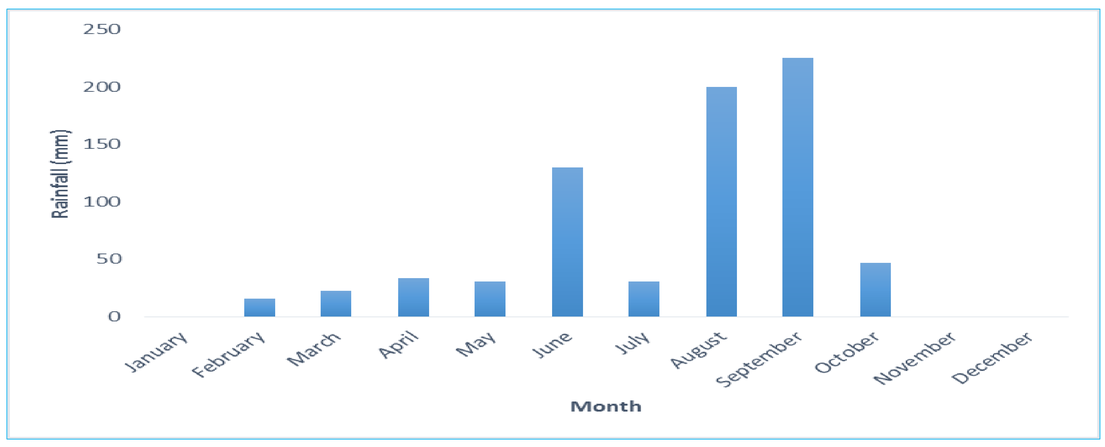

Figure 1: Rainfall during the year 2015

Table 1: Effects of four different cultivars of Napier grass on biomass yield, plant height, tiller number and leaf to stem ratio.

Parameters	16837	16798	16840	Local	Sed	P value
Biomass Yield (DM kg/ha)	2299.0	1354.0	1384.0	3339.0	1204.9	0.38
Tiller Number	9.5	16.1	10.3	13.1	2.8	0.18
Plant Height (m)	1.3	1.1	1.1	1.4	0.2	0.33
Leaf : Stem (g)	1.0	0.9	1.2	1.1	0.2	0.82

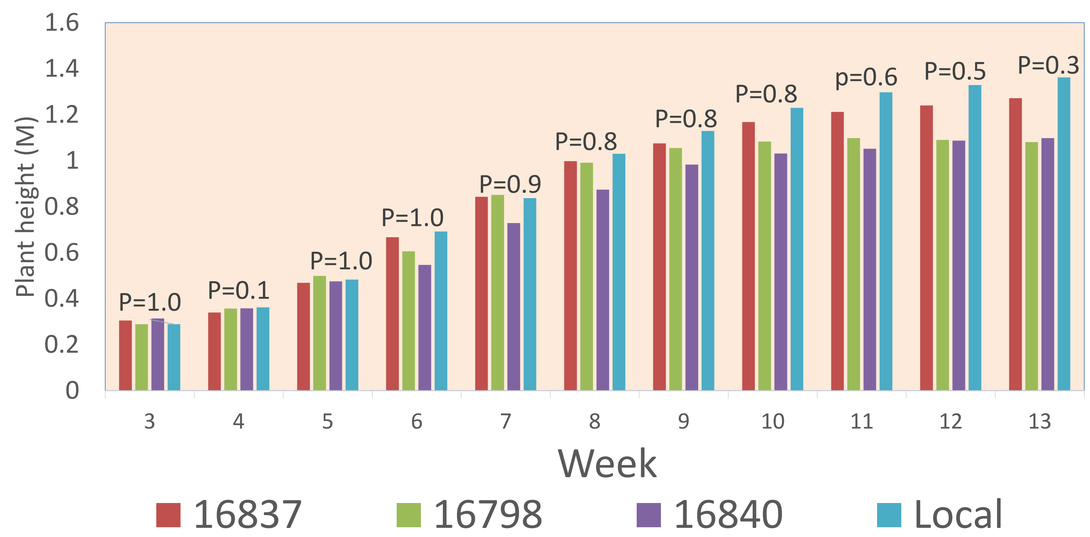

Figure 2: Effect of four different cultivars Napier grass on plant height

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

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