



Napier/elephant grass (*Cenchrus purpureus* and hybrids) for livestock feed

Description

- Napier is a very tall perennial grass which tends to become coarse as it matures.
- It is a vigorous deep-rooted grass which tolerates limited dry spells.
- It is fast growing and has good palatability in early growth stage when cut often.

Uses/applications

Napier is mainly used to provide high quality cut and carry feed for livestock in the sub-humid middle altitude regions (Negawo et al. 2017) but can also be established as a perennial pasture (Vieira et al. 2019).

It is wilted before feeding when fed fresh. It also makes good silage, hay (when finely chopped) and pellets.

Its high biomass production has led to it being a candidate species for biofuel production (Rocha et al. 2019). It also has a role in phytoremediation due to its rapid growth rate and ability to survive in soils contaminated with organic or heavy metal pollutants (Osman et al. 2020). More recently, Napier is being promoted as a component in the push-pull strategy for insect pests in maize fields (Kumela et al. 2019).

Limitations

- Napier does not persist well without the application of fertiliser.
- It will develop coarse, fibrous and sharp leaves if not cut frequently.

Environment

- Napier tolerates poor drainage.
- It is good for soil stability and as a wind break.
- It produces best growth between 25 and 40°C; it can

survive low night temperatures but growth generally ceases below 7°C. Thus, it is not well adapted to areas with prolonged frost although it will regenerate with the onset of warm, moist conditions.

Management

Field preparation: Napier can be planted on ploughed fields or using conservation/zero tillage.

Establishment: stem cuttings of 2–3 nodes are planted at 45° angle, basal 2 nodes buried and 50 cm spacing between plants.

Fertiliser: urea at 100 kg per hectare or manure after cutting is recommended.

Weeding: during early plant establishment and after every cut.

Companion species: yields increase when intercropped with legumes, for example, Desmodium and pigeon pea (Adie et al. 2018) and irrigated.

Harvesting: cut at 5 cm 6–8 times per year depending on precipitation and irrigation, or every three months at higher altitudes.

Performance: varies according to the genotype, agroecology and management practices. Productive accessions, supplemented with limited irrigation during dry periods and a single fertiliser application, produce >20 tonnes dry matter per hectare per year ($\text{t DM ha}^{-1} \text{ yr}^{-1}$) when cut frequently (eight weeks regrowth) in a mid-altitude tropical environment (Habte et al. 2020). It can produce between 50–70 $\text{t DM ha}^{-1} \text{ yr}^{-1}$ under the same management system with two fertiliser applications (unpublished data). Crude protein of productive accessions is 11–14 %.

Accessions released as varieties

Country	Variety	Accession no.	Year	Institute
Ethiopia	Zehone 02	16791	2017	EIAR
	Zehone 03	16819	2017	EIAR
	ILCA-14984	14984	1984	EIAR
Kenya	Kakamega I	16791		KALRO
	Kakamega II	16798		KALRO

Promising accessions

Productive accessions: 16791, 16819, BAGCE_100, BAGCE_30, 14355, BAGCE_34, 16802, 15357, BAGCE_93 and 16839

Water use efficient accessions: 16819, BAGCE_30, 16802, 16791, 16795, BAGCE_100, 16803, 16839 and 14355

High quality (crude protein 14–15.5 %) accessions: 16811, BAGCE_17, 16815, 16812 and 16794

Disease resistant/tolerant accessions: (<https://www.genesys-pgr.org/subsets/000b28e7-8250-4211-8008-3bc4f4bfe49a>)

References

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Feed and Forage Development

Cover photo

Napier grass in Addis Ababa, Ethiopia
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