



“SUNN HEMP FOR DAIRY: A Climate-Smart Protein to Feed Uganda’s Livestock”

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WHAT IS SUNN HEMP?



Overview

- Sunn hemp (*Crotalaria juncea*) is a fast-growing tropical legume originating from the Indian subcontinent.
- It belongs to the Fabaceae (Leguminosae) family and fixes atmospheric nitrogen through root nodules.
- Commonly grown as a cover crop, green manure, and increasingly as a forage/fodder crop for livestock.
- Grows rapidly — reaching 1.5–3 meters tall within 60–90 days under favorable conditions.
- Thrives in tropical and subtropical regions with well-drained soils and moderate rainfall.

Origin

Indian Subcontinent

Family

Leguminosae

Lifespan

Annual crop

Height

1.5 – 3.0 m



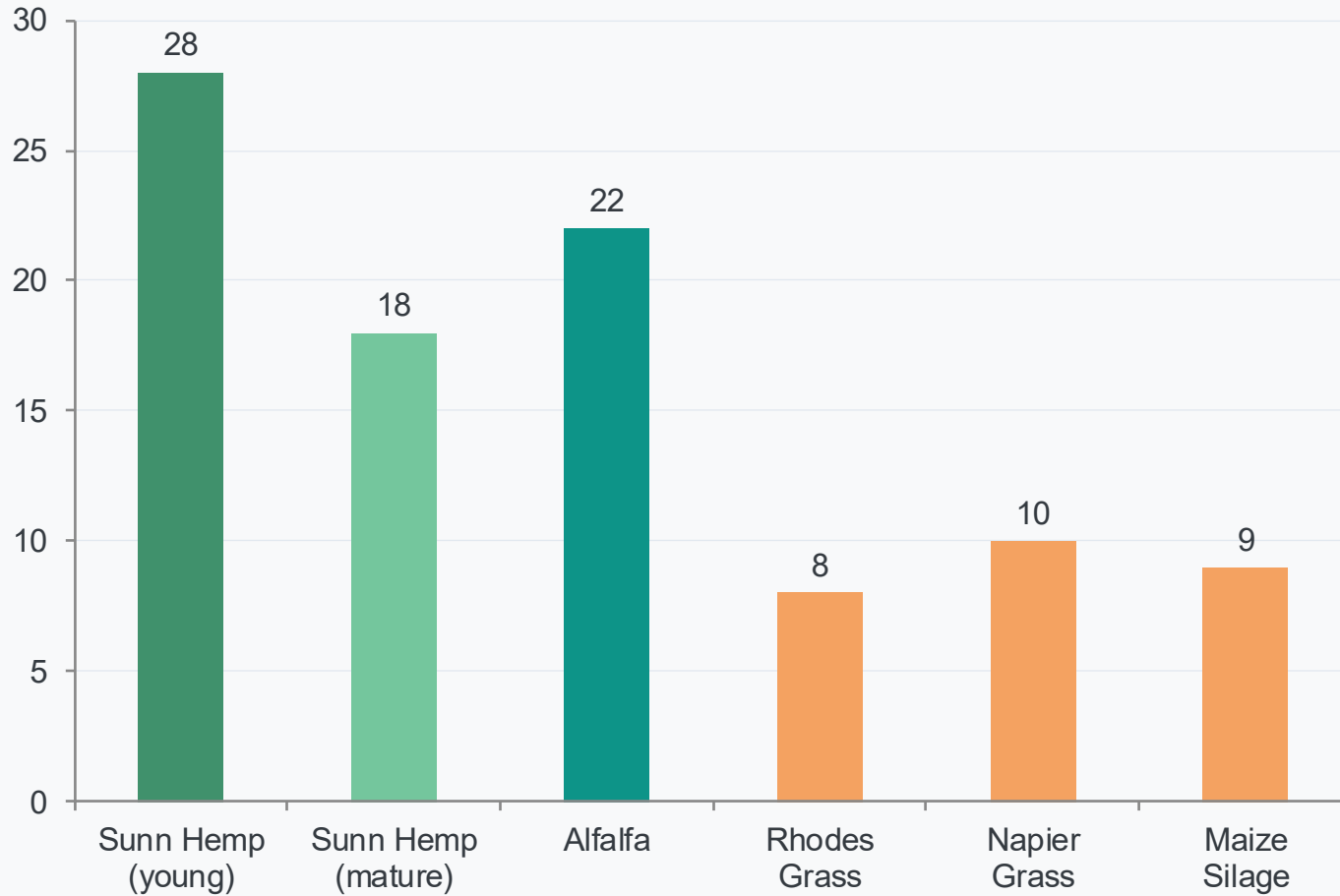
Also known as: Indian hemp, Brown hemp, Madras hemp





NUTRITIONAL COMPOSITION

Crude Protein Content (%) — Comparison



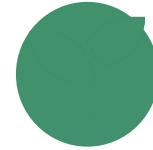
Nutrient	Young (% DM)	Mature (% DM)
Crude Protein	24–28%	16–20%
Crude Fiber	18–22%	28–35%
ADF	22–26%	32–38%
NDF	35–42%	48–56%
Dry Matter	15–20%	22–28%
Digestibility	65–75%	50–65%

FEEDING METHODS FOR LIVESTOCK



Fresh Forage

- Cut-and-carry feeding
- Best harvested at 45–60 days
- High palatability
- Feed within hours of cutting



Silage

- Ensile at 60–70 days growth
- Wilt to 28–35% DM first
- Mix with maize for best quality
- Feed 30–40% of ration



Hay

- Dry to <15% moisture
- Harvest before flowering
- Retain more protein than hay grasses
- Store in dry, ventilated area



Grazing

- Strip/rotational grazing best
- Graze at 60–80 cm height
- Limit to 50% of diet
- Monitor for bloat risk

LIVESTOCK-SPECIFIC RECOMMENDATIONS

Animal	Inclusion Rate	Form	Benefits	Caution
 Cattle (Beef)	20–30% of diet	Fresh, silage, hay	Improved weight gain; good CP source	Avoid >40% — risk of bloat
 Dairy Cattle	15–25% of diet	Silage or hay preferred	Supports milk production & protein	Excessive may reduce palatability
 Goats & Sheep	25–35% of diet	Fresh or dried	High CP boosts growth in small ruminants	Introduce gradually
 Poultry	5–10% of feed	Dried leaf meal	Protein supplement; reduces feed cost	Limit due to anti-nutritional factors
 Pigs	Up to 15% of diet	Dried meal, fermented	Economic protein source for pigs	Process to reduce alkaloids
 Rabbits	30–50% of diet	Fresh leaves & stems	Excellent forage, high digestibility	Good tolerance, safe in higher amounts

BENEFITS & CHALLENGES



BENEFITS

- High crude protein (18–28%) reduces purchased feed costs
- Fixes 100–200 kg N/ha — improves soil fertility
- Fast growth — harvestable in 45–60 days
- Drought tolerant once established
- Suppresses nematodes and weeds naturally
- Improves animal weight gain and milk production
- Low input requirements — suitable for smallholders
- Can be intercropped with other feed crops



CHALLENGES

- Contains pyrrolizidine alkaloids (PAs) — toxic at high inclusion rates
- Bloat risk in ruminants if fed as sole forage
- Palatability decreases with maturity
- Must be introduced gradually into the diet
- Not suitable for horses — PA sensitivity
- Silage making requires wilting to reduce moisture
- Seed availability may be limited in some regions
- Anti-nutritional factors require monitoring in monogastrics



GROWING GUIDE FOR MAXIMUM FEED YIELD

1

Land Preparation

Plow and harrow to a fine tilth. pH 5.5–7.0 optimal.

2

Planting

Sow 15–25 kg seed/ha at 30–45 cm row spacing. Plant at the onset of rains or with irrigation.

3

Early Growth

Germination in 5–7 days. Weed control critical in first 3 weeks. No N fertilizer needed.

4

First Harvest

Harvest at 45–60 days (before flowering) for highest CP. Leave 30 cm stubble for ratoon crop.

5

Subsequent Cuts

Ratoon crops every 45–60 days. 2–3 cuts per season possible. Apply 20 kg K/ha after each cut.

KEY TAKEAWAYS

01

High-protein forage (18–28% CP) that can significantly reduce purchased protein supplement costs

02

Suitable for cattle, dairy, goats, sheep, poultry, pigs, and rabbits — each with specific inclusion limits

03

Best fed at 15–35% of total diet depending on livestock species and form of processing

04

Harvest at 45–60 days (pre-flowering) for maximum nutritional value and palatability

05

Monitor for bloat in ruminants; limit or process for horses and monogastrics due to alkaloid content

06

Dual-purpose crop — improves soil fertility while providing high-quality livestock feed



THANK YOU