

These diseases limit its use in humid areas or on heavy clay soils.

### Nutritive value

The nutritive value of leaves is similar to that of lucerne (*Medicago sativa*).

Plant part	%crude protein	%DM
Leaf and stem	15-25	60-70
Young leaves	20-30	77-82

Tree lucerne is useful as a maintenance feed, during the dry period and when fed together with other feeds. The leaves are high in Vitamin A and low in sodium, phosphorus and sulphur and therefore supplementary mineral licks are recommended.

The leaves may be used in poultry feed to enhance egg yolk colour.

Though there is no reported toxicity in sheep, cattle, goats, or poultry, livestock take some time to get used to it as a feed.

### Production potential

Green forage yields of about 5 t/ha have been obtained after 6 months re-growth in the Ethiopian highlands.

### Seed production

Pods ripen in the dry season and easily shatter and hence should be harvested before shattering for drying in the sun to release the seeds.

The seeds may not germinate in the soil for several years, and susceptibility of young seedlings to grazing limits its survival.



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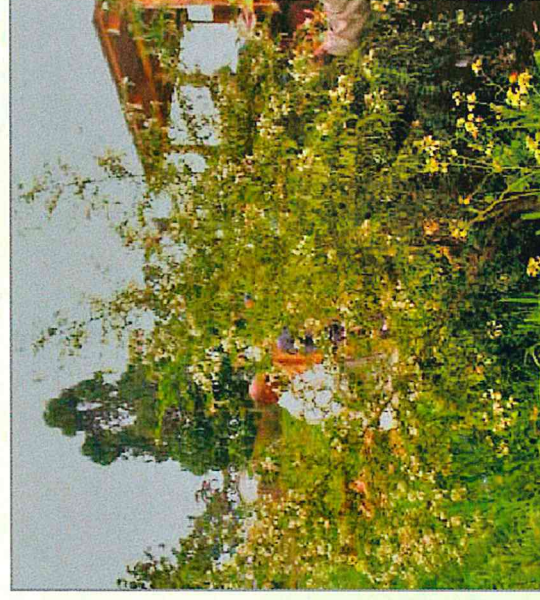
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KARI information brochure series / 23 / 2008

**Ksh. 20**

# Tree Lucerne for livestock feeding



## Introduction:

Tree Lucerne (*Chamaecyclus palmensis*) is a new high quality and palatable fodder shrub whose other uses include ornamental, wind and water erosion control, land rehabilitation and fuel wood among others.

## Description

It is a perennial medium sized evergreen tree with long drooping branches, soft hairy leaves that are bluish-green in colour:



The flowers are scented, creamy-white and seed pods are black and flattened and each contains ten flattened oval-shaped brown-black seeds.

## Altitude and Soil

### Altitude

Grows between 1,000 to 2,000 m and at times close to 3,000 m above sea level. Mature trees can withstand frost but not small seedlings.

## Rainfall

350-1,600 mm per annum with 600 mm as optimum but can survive in areas with as low as 200 mm due to its deep rooting habit.

## Soils

- It prefers light well-drained sandy soils on slopes and hillsides, but also on gravels, loams, limestones and laterites.
- It is very sensitive to water logging.
- Adapted to a wide range of soil pH and prefers acidic soils of pH 4.0 but can also survive on sandy, alkaline soils of pH 8.5.

## Establishment

Seeds are hard and require soaking in hot water for 48 hours prior to planting. For improved performance seeds should be treated with rhizobium.

### Seed bed

Should be well prepared to a fine, firm tilth and weeds should be controlled for successful establishment.

### Direct seeding:

- Sow seeds directly at depths of 1-2.5 cm but deeper in sandy soils in dry areas to ensure sufficient moisture for germination.

### Nursery seeding

- Seeds can be raised in nursery beds but excessive watering should be avoided to prevent damping off disease of seedlings.

## Transplanting:

- Transplant in moist soft soil when seedlings attain 45 cm height.
- Plant in rows 5 m apart and 2.5 m between plants to give a density of about 700 trees per hectare.
- Apply 200 kg/ha/year of super phosphate to maintain high yields.

## Management

Trees should be protected from browsing and bark stripping by livestock for at least 2-3 years. Once well-established browsing can be done year round.

Prune at the end of the first year to promote a bushy, multi-stemmed habit. Maintain the plants at one metre if grazed by sheep/goats, and cattle.

Tree Lucerne responds well to frequent cutting, although re-growth is slow for the first week after harvest. Harvesting in the dry season leads to stunting, low biomass yields and increased plant mortality. Trees can persist for up to 30 years if well managed.

**Note:** Tree Lucerne has the potential to become a major weed problem in natural vegetation especially in high rainfall areas

## Pests

Tree Lucerne is susceptible to the Lucerne moth (*Uresiphita ornithopteralis*), slugs, cutworms and grasshoppers which eat emerging seedlings. Rabbits also like it.

## Diseases

The major diseases are root rot caused by the fungus phytophthora and damping off caused by the fungus Fusarium.