

Tagasaste

What is Lucerne Tree?

- **ever-green, fast-growing** tree which *can* reach 6m in 6 years
- **nitrogen-fixing** legume plant
- **nutritious** all year
- similar to normal lucerne (alfalfa)
- grows for **60 – 80 years** and will be a life-long food-producing investment on your farm.
- extremely **drought-resistant**
- very tough and survives **heat, winds, frost and cold**
- **Sheep Lucerne** (known as *Weeping Tagasaste*) is a hybrid plant with considerably less carrying-capacity. (Note – we do NOT stock this hybrid.)

Why plant it?

- **Doubles** your land's **carrying capacity**
- **Recovers 50 days** after grazing or pruning
- **Grazed** directly off the tree
- Highly **nutritious** food
- **No danger of bloat**
- **No mechanisation** needed
- All-year **supplementary grazing**
- Excellent **wind-break & fire-break**
- Re-conditions the soil with **nitrogen-fixing nodules**, bringing the soil back to life
- Abundant white, fragrant flowers which attract **bees**
- **Prolific seeds-bearing** trees
- Develops **deep tap roots** which delve 10m deep into the earth to source water, and then will not require watering after the first year.
- Trees provide **shelter, moisture & nitrogen** for **grasses** that grow between rows.

More information ~

- Trees are ready for grazing when about 1.5m height with stems of about 2.5cm thick. We recommend that you **do NOT graze** your trees for the first **2 years**.
- Sheep, cattle, Boer goats, and horses browse and graze tree lucerne **directly off** the tree.
- Keep a **watchful** eye to check grazing off the trees and send the animals out when most the leaves are eaten.
- Leave the trees for about **50 – 60 days to recover** and grow new leaves. It bounces back!
- This tree loves to be **pruned** and grazed. Tender, green leaves and shoots sprout all over the branches and main stem. (Read more about pruning [here](#))
- Prune long branches to keep the tree at **grazing height**, about 1 meter high.
- Prune when young to promote more **side shoots**
- Animals will stimulate fresh growth with their grazing.
- Pruned branches provide excellent fodder when **chipped** and can be fed green and wet, or as dried fodder.

Scientific name

Chamaecytisus prolifer (L. f.) Link subsp. *prolifer* var. *palmensis* (H. Christ) A. Hansen & Sunding

Synonyms

Chamaecytisus palmensis (H. Christ) F. A. Bisby & K. W. Nicholls

Chamaecytisus prolifer (L. f.) Link subsp. *palmensis* (H. Christ) G. Kunkel

Cytisus palmensis (H. Christ) Hutch.

Cytisus prolifer L. f. subsp. *palmensis* H. Christ

Cytisus prolifer L. f. var. *palmensis* H. Christ

Family/tribe

Family: *Fabaceae* (alt. *Leguminosae*) subfamily: *Faboideae* tribe: *Genisteae*. Also placed in: *Papilionaceae*.

Common names

tagasaste, [tree](#) lucerne, escobon (Spanish).

Morphological description

[Perennial](#), [evergreen](#), hardy, unarmed [tree](#), 5-6 m in height with a crown diameter of a similar size. It has long drooping softly-hairy, leafy branches. Leaves dull, bluish-green [trifoliate](#). Leaflets narrowly rhombic with entire margins up to 7 cm long. [Petiole](#) up to 2 cm long. Stipules minute. Inflorescences creamy white, scented, axillary borne in clusters. Seed pods black, [pubescent](#), flattened, up to 5 cm long with about ten flattened oval-shaped brown-black seeds 3 x 5mm. About 45,000 seeds/kg.

Distribution

Native to:

Europe: Spain (Canary Islands).

Other:

It is extensively planted as a fodder [shrub](#) or for [land rehabilitation](#) and is naturalized in New Zealand and Australia, where it was introduced in 1879.

Uses/applications

Used as a multi-purpose fodder [tree](#) for [cut and carry](#) as a productive source of high quality, palatable and non-toxic fodder and seed for livestock and poultry in the tropical highlands and subtropics. Also used as an ornamental and windbreak and for bee [forage](#), fuelwood and biogas. Tagasaste can be planted as a hedge and also has potential for [alley cropping](#) systems.

Ecology

Soil requirements

Tagasaste prefers light well-drained sandy soils on slopes and hillsides, but thrives on gravels, loams, limestones and laterites. Slag heaps and mining dumps can also reportedly be planted with the [tree](#). It has wide adaptability to a range of soil [pH](#) and although growing better on acid soils as low as [pH](#) 4.0, it can also survive on sandy, alkaline soils with [pH](#) 8.5. It is not tolerant of saline soils.

Moisture

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It is extremely [drought](#) tolerant and thrives under [annual](#) rainfalls between 350-1,600 mm. [Drought](#) tolerance is due to its deep rooting [habit](#) of 10 m or more and it can survive in areas with as low as 200 mm [rainfall](#), although it requires [rainfall](#) above 600 mm for good production. It is very sensitive to poor drainage and cannot tolerate water logging.

Temperature

The normal range for cultivation is from 1,000-2,000 m altitude. Tagasaste grows well up to altitudes approaching 3,000 m in the tropics and is one of the few fodder trees that can withstand frost as low as -9°C in the tropical highlands, although care should be taken with small seedlings, which are more sensitive to frost.

Light

No information available.

Reproductive development

Profuse flowering of the scented, creamy-white flowers occurs during the rains and early dry season in the tropical highlands or cool wet winter months in a Mediterranean climate.

Defoliation

The [tree](#) readily coppices and, during the 2- to 3-year establishment period, can be pruned back to the ground to encourage multiple stems. It responds well to frequent cutting, although regrowth is slow for the first weeks after harvest, increasing with time. Harvesting in the dry season leads to stunted regrowth, low biomass yields and increased plant mortality. Trees should be protected from browsing by livestock for at least 2-3 years. When young, sheep will eat the bark and kill the [tree](#) if it is not protected, but once well-established sheep can [browse](#) them all year round and have a remarkable capacity to recover from [defoliation](#). It is reported that trees persist for up to 30 years if well managed.

Fire

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Tagasaste does not burn readily because it stays green during the dry season.

Establishment

Tagasaste is hard seeded and seeds require [scarification](#) in hot water prior to planting. Seedbeds should be well prepared to a fine, firm tilth with no weeds. Weed control is essential for successful establishment. Seeds can be directly sown at sowing depths of 1-2.5 cm, although deeper sowing may be necessary in sandy soils in dry areas to ensure sufficient water for germination. Establishment can also be through transplanting nursery-raised seedlings but care should be taken not to over-water the young seedlings to avoid damping off. Seedlings of about 45 cm height can be transplanted into moist soft soil in rows 5 m apart and 2.5 m between plants in the row, giving a density of about 700 trees per hectare. Very high densities of up to 10,000-20,000 seedlings per hectare have also been used successfully.

Fertiliser

Tagasaste is a nitrogen fixing [tree](#) and uses the same [rhizobium](#) inoculant as cowpea.

Compatibility (with other species)

It can be used in [alley farming](#) and is an excellent windbreak.

Pests and diseases

It is very sensitive to root rot caused by *Phytophthora* and also damping off caused by *Fusarium*. These are the major limitations to its use in humid areas or on vertisols. It has few insect pest problems but is susceptible to the [tree](#) lucerne moth (*Uresiphita ornithopteralis*) and slugs, cutworms and grasshoppers eat emerging seedlings.

Ability to spread

Spreads by seeds from the [dehiscent](#) pods. However, hard seeds may not germinate in the soil for several years, and susceptibility of young seedlings to grazing limits its survival to protected or fenced areas.

Feeding value

Nutritive value

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The nutritive value of leaves is similar to that of lucerne (*Medicago sativa*). Leaves contain from 20-30% protein when young with high [in vitro](#) dry-matter digestibility (0.77-0.82) and no reported toxicity. The leaves have a low sodium content and marginal levels of phosphorus and sulphur. Leaves are high in vitamin A and when used for poultry feed, can increase the colour in egg yolks.

Palatability/acceptability

The leaves are reported as highly palatable. However, livestock take a little time to get used to it as a feed, and crossbred dairy cows in Ethiopia would not consume large quantities of wilted [forage](#), resulting in reduced dry matter intake.

Toxicity

Tagasaste has been fed to sheep for long periods without any problem and there are no reports of toxicity in sheep, cattle, goats, deer or poultry. Levels of tannins are low. No cases of bloat have been reported after feeding with tagasaste.

Production potential

Dry matter

Research results from Western Australia and New Zealand suggest edible dry matter yields of 11 t/ha/yr are obtainable in good growing conditions but edible biomass yields of about 5 t/ha were obtained after 6 months regrowth in the Ethiopian highlands.

Animal production

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Growing lambs showed liveweight gains of 95±30 g/day on a [cut and carry](#) system with tagasaste in New Zealand and up to 35 g/day when supplemented with 60% of the diet in Ethiopia. Mineral licks are recommended when feeding tagasaste due to the low levels of minerals in the leaves.

Seed production

Tagasaste is a prolific seeder. The pods ripen in the dry season and are [dehiscent](#). Pods are usually harvested before shattering and dried in thin layers in the sun to release the seeds.

Strengths

- Extremely [drought](#) tolerant.
- Fast growing, palatable fodder.

Frost tolerant.

- **Limitations**
- Will not tolerate poor drainage or [waterlogging](#).

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Young plants are easily eaten out and must be protected from grazing.

- **Other comments**

Despite its wide use as a fodder [tree](#) in the cool tropics there are no commercial cultivars available.