

● Uses and Management of Tagasaste (*Chamaecytisus palmensis*)

Introduction

The evergreen shrub tagasaste (also known as tree lucerne) is a multipurpose plant offering a number of environmental benefits. It is well suited to a nurse role for native plant regeneration, having a rapid growth rate to provide quick shade and shelter. It is relatively short lived (15-18 years) and will give way to an emerging native canopy. Tagasaste is a legume and nitrogen fixer, and is well adapted to planting on degraded soils. It will tolerate dry sites and soil pH ranging from 5.5 to 7.5. It is also a highly palatable source of fodder for native birds, notably the kereru (wood pigeon) which will feed on its foliage and masses of white flowers from June to September. The feeding of such bird species promotes the introduction of additional native plant seed onto revegetation sites.



Tagasaste is a valuable winter food source for kereru

Tagasaste is a coppicing species that will produce high quality firewood. It can be grown as a secondary species in shelter belts, as a single species hedge row, or as a managed stock fodder crop. Research in New Zealand has found that tagasaste can produce up to 13.7 tonnes of edible dry matter per season

when planted at 2,500 plants/ha. It has a nutritional value similar to that of ryegrass/white clover or lucerne hay, and its extended winter flowering also provides valuable bee fodder.

Establishment Factors

The critical establishment factors for Tagasaste, ranked in order of importance, are detailed below.

Pest Control

Tagasaste is highly palatable and will be readily attacked by rabbits, hares, wallabies and possums.

Extensive control is necessary prior to planting, with follow-up activity (e.g. night shoots) during spring and summer. Environment Bay of Plenty pest animal officers are available to advise on pest control.

In conjunction with pest control the use of individual plant protection is recommended where there is a high pest population. This can be done with the use of repellents or cages, although repellents generally cost less. Repellents make plants unpalatable but not necessarily pest proof. They are most successfully deployed where pest numbers are low and alternative feed is plentiful. Successful repellent materials that have been identified in New Zealand are thiram (fungicide) and egg. Egg based repellents have a field life of approximately three weeks. Thiram can be obtained from most garden centres and repellents based on this last for six to eight weeks.

Recommended formulations are:

Egg Mix

50 g egg powder **or** 4-5 fresh eggs
100 ml Primal AC234 (acrylic resin) **or** water based paint
850 ml water

Thiram Mix

100 g thiram (80% a.i.)
100 ml Primal AC234
900 ml water

Thiram is an agrichemical – avoid skin and eye contact and inhalation of spray mist. Note all label instructions regarding use and handling, as well as first aid information.

Use only light applications of repellents, spraying with a large droplet size. A leaf coverage of about 50% is adequate. Do not dip plants because this will block leaf stomata and promote defoliation. Plants can be easily treated by repellent application in the nursery, although application in the field permits the additional treatment of surrounding ground.

Site Preparation

Weed control of competing vegetation is especially important. Ensure any brushweed species on site are properly controlled prior to planting tagasaste. Pre-planting herbicide application is also recommended, with spot applications rather than strip spraying to hinder access by pest animals. Spots should be approximately one metre square, and be sprayed three weeks before planting. For post-planting weed control around tagasaste do not use any herbicides containing clopyralid (e.g. Versatill™) or dichlobenil

(e.g. Prefix®). For more information about establishment of tagasaste, contact your local Land Management Officer and see **Sustainable Options LM15** Establishment Techniques for Revegetation Projects.

The use of fertilisers will help plant establishment. Tagasaste responds to phosphorus and a dressing of 100g of superphosphate around newly planted seedlings will help to promote more growth. On coarse pumice soils the application of 50g of 'MagAmp' fertiliser granules (7-18-5) is recommended for incorporation into planting holes.

Plant Stock

Tagasaste plants should be robust to ensure good establishment. Seedlings should be 25-30 cm high and have a stem diameter at the root-collar of 5-7mm. If bare rooted stock is used it should have a dense root system produced by regular nursery root pruning. Container grown stock will give reliable establishment, but requires more handling in the field. Plants can also be somewhat spindly if grown in cell type containers at close spacings. Stock reared in glasshouse conditions should be properly hardened-off before being planted out. Tagasaste seedlings are easy to grow and seed can be collected off local plants from February onwards. The seed has a hard coat but will germinate readily if scarified. To do this, drop seed into boiling water and then leave it to cool overnight. This will soften the seed coat and promote germination.

Bare rooted stock should be planted early in the mid winter planting season to avoid the risk of dry conditions causing transplant shock. Container

stock is much less susceptible to transplant shock and can be planted late into the season. This may be desirable on certain sites to avoid peak feed demand by rabbits.

Stock should also be inoculated with a nitrogen fixing *rhizobium*, by cultivating in an inoculated nursery soil or by dipping seedling roots in a prepared solution at pricking out. Dipping solutions can be prepared by collecting and crushing nodules for established plants, or by using a commercial treatment for the inoculating of *Lotus pedunculatus*. Tagasaste planted on (former) gorse infested sites are also likely to be colonised by the resident *rhizobium*.

Another option for field establishment is by means of direct seeding. In this case, seed needs to be pretreated by scarification and *rhizobium* inoculation. Recommended sowing rates for broadcast application are 10-20g per square metre. Direct seeding has a number of disadvantages however, as it requires extensive weed control, is wasteful of seed and plants may require some thinning. Small seedlings are also highly susceptible to frost and pest damage.

Similar Species

Tagasaste is often referred to as "tree lucerne" but should not be confused with tree lupin (*Lupinus arboreous*). This species is also a legume and is capable of forming a large shrub. It is commonly found on road sides, river beds and sand dunes. It is distinguished by a bright yellow flower spike in early summer.

This species is badly affected by a foliage disease however, and specimens rarely reach maturity. Although tree lupin can produce an abundance of seed, it is

thought to be of low palatability to native birds.



Successful use of Tagasaste as a nurse crop following a bush fire. After 10 years, regenerating native shrubs have overtaken tagasaste planted at 1200/ha. Area at right of photograph was not planted with tagasaste and regeneration is much slower.

Another shrubby legume that bears some similarity to tagasaste is Montpellier Broom (*Teline monspessulana*), although it carries bright yellow pea-like flowers as distinct from the white flowers of tagasaste. While the foliage of this species is palatable to some native birds, it is classified as a National Surveillance Pest Plant, and is prohibited from propagation and distribution or sale within New Zealand.



For further information and advice, contact your local land management officer at Environment Bay of Plenty:
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