

Potential of tagasaste as a forage plant in a high rainfall temperate environment

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For over 100 years, tagasaste (*Chamaecytisus palmensis*) has been found in many parts of Australia, mainly on roadsides and as isolated shelter trees, but has had little impact on commercial agriculture, especially in Victoria. This paper summarises the production of tagasaste in the first two years of establishment in Gippsland, Victoria.

Methods

In October 1984 we established several hedges of tagasaste at Ellinbank (1,000 mm rainfall), under a range of densities:

- single rows with plants 1 m apart within rows (1/m),
- double rows, 0.5 m apart between rows, and trees 1 m apart within the rows (2/m),
- double rows, again 0.5 m apart but with plants 0.5 m apart within rows (4/m).

The hedges were 32 m apart, and protected by electric fences 1.5 m apart. About 50% of plants did not survive the first summer, due mainly to damage from hares. These were replaced in May 1985. Hedges have been harvested at a height of 1 m on three occasions.

Results and Discussion

Observations on a separate hedge of tagasaste showed that cattle readily ate virtually all leaves and stems up to a thickness of 4 - 6 mm. Emphasis in presenting results has therefore been placed on the edible yields of tagasaste, excluding stems greater than 5 mm (Table 1).

Table 1. Production and quality of tagasaste hedge, planted October 1984 - May 1985 (4/m).

	13/1/86	4/8/86	31/1/87
Height (m)	1.65	2.06	2.60
Total DM yield (kg/m)	0.38	1.17	4.17
Edible yield (kg/m)	0.31	0.85	2.78
Digestibility (%)	71.7	67.2	68.4
Crude protein (%)	20.0	22.5	19.2
Inedible yield (kg/m)	0.07	0.32	1.39

The yields of the less dense plantings have consistently been less than that of the 4/m treatment. In the second year after planting, the tagasaste (4/m) produced over 5.5 kg DM/m of hedge, and almost 4 kg of edible DM/m (based on the 1.5 m width of row this is equivalent to over 24 t/ha). Soil moisture at 1.25 m, was 5% less under the hedges than under pasture in early February 1987. Surface soil moisture and growth of pastures within 16 m of the hedges was unaffected by the tagasaste.

Given that average annual production of improved pasture (perennial rye grass/white clover) is close to 10 t DM/ha, it would appear obvious that tagasaste should be grown, at least experimentally, under more intensive conditions, than simply in hedges surrounding existing pastures.