

Scientific Name:

Clitoria ternatea L.

Family:

Fabaceae

Common Names:

Butterfly pea, blue pea

**Plant Description**

Clitoria is a high-quality, protein-rich legume, a «tropical alfalfa» often referred to as a protein bank that can be grown at low cost (Cook et al. 2005). It is a vigorous, trailing, scrambling or climbing tropical vine. There are numerous ecotypes, agro-types and cultivars that differ in flowers and leaflets (FAO 2012; Staples 1992).

Roots: They root only at the tips (Cook et al. 2005; Staples 1992).

Stems: Stems are sparsely pubescent, sub-erect and woody at the base and may be up to 5 m long.

Leaves: The leaves are pinnate, bearing 5-7 elliptical, 3-5 cm long leaflets.

Flowers and Pods: The flowers are solitary or paired, deep blue or pure white and about 4 cm surface area. The fruits are flat, linear, sparsely pubescent pods that dehisce violently at maturity and throw 8-10 dark and shiny seeds (FAO 2012; Cook et al. 2005; Staples 1992).

Propagation and Cultivation

Clitoria can be sown in pure stands or in association with tall and tussock grasses eg. elephant grass (*Pennisetum* species).

The seeds can be collected from mature plants and sown at the depth of 1.5 to 4.0 cm in well prepared beds. The plants can be staked since it is a vine or allowed to cover the soil. Full crop cover should occur 4 to 6 months after planting.

Clitoria is particularly valuable as protein-rich forage in very heavy and shallow soils where other species such as leucaena (*Leucaena leucocephala*) cannot grow (Cook et al. 2005).

Forage Management:

Once established, it quickly covers the soil and can be grazed or be utilized in cut-and-carry systems. It should not be cut too low and too often. Forage DM may range from 0.2 to 16 t/ha/year. Under zero-grazing systems the plants can be cut every 56 days (6 – 9 weeks depending on growing conditions) especially water to a height of 5 to 10 cm for optimal yield of dry matter and protein (harvest approx. 65% of the vegetation).

Nutrient content Clitoria leaves, fresh

Analysis	Unit	Avg	Min	Max
Dry matter	% as fed	21.9	12.7	30.5
Crude protein	% DM	21.3	12.8	28.7
Crude fibre	% DM	25.6	17.3	40.1
Ether extract	% DM	3.0	1.2	4.4
Ash	% DM	9.9	6.6	17.8
Gross energy	MJ/kg DM	18.6	17.1	19.6

Table taken from <http://www.feedipedia.org/node/318>

Feeding Clitoria to Small Ruminants

Livestock tend to prefer Clitoria over other legumes and grasses and it is therefore much valued as a pasture legume. It is also used for cut-and-carry feeding systems including hay and silage (Gomez et al., 2003). A normal standard for feeding weaned small ruminants is to 4% body weight on a dry matter basis example:

- According to the table above the average dry matter of Clitoria is 21.9% which means that 100 lb of fresh Clitoria contains approximately 21.9 lb dry matter and 78.1 lb water.
- A 100lb animal would require 4 lb DM and Clitoria should comprise up to 20% of the daily intake therefore 20% of 4 lbs is 0.8 lb DM.
- To provide 0.8 lb DM of Clitoria you would require $100/21.9*0.8= 3.66$ lb fresh Clitoria leaves.

Mature animals should be fed 2.5% body weight on a dry matter basis

References

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2. FAO, 2012. Grassland Index. A searchable catalogue of grass and forage legumes. FAO, Rome, Italy
3. Gomez, S. M. and A. Kalamani. 2003. Butterfly Pea (*Clitoria ternatea*): A nutritive multipurpose forage legume for the tropics - An overview. Pakistan J. Nutr., 2 (6): 374-379
4. Heuzé V., G. Tran, A. Boudon, and D. Bastianelli. 2016. Nacadero (*Trichanthera gigantea*). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. <http://www.feedipedia.org/node/7270>

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5. Staples, 1992. *Clitoria ternatea* L. Record from Proseabase. Mannetje, L't and Jones, R.M. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia.

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