

Poor man’s Lucerne – *Sericea lespedeza*

Poor man’s Lucerne is a crop that can be productive at low input costs, under conditions where other forage legumes like Lucerne won’t even survive. It is an erect, deep-rooted perennial legume that has good longevity. It is a warm-season crop that also grows well in autumn and spring. From a conservation point of view it is suited to a very wide range of conditions, making it ideal for rehabilitation of mined land, road banks and other disturbed areas. It requires at least 550mm rainfall per annum for production.



Strengths

- 5-9 t DM/ha/season
Depending on environmental conditions and management
- Strong perennial
- No bloat and a high amount of digestible protein.
- Anti-parasitic qualities due to tannins
- Ability to fix atmospheric nitrogen (N)
- Strong root system – drought tolerant
- Adapted to soil with poor fertility
- Disease and insect resistant

Limitations

- Slow to establish
- Becomes woody and unpalatable when it matures and poorly managed
- Contains tannins that further lowers palatability especially when mature



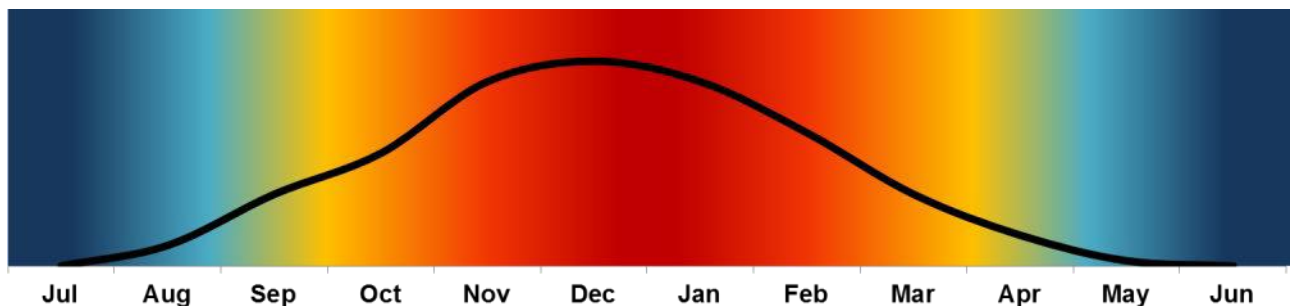
What can it be used for?

Hay: Bales can be used to supplement a fodder flow plan or can generate income from sales.

Grazing: Grazing without the risk of bloat is made possible by the presence of tannins.

Production potential: 5 – 9 t DM/ha/season is achievable under dry land conditions. Yields depend on soil fertility, climatic conditions and frequency of utilisation ^(1, 2,6).

Do not utilise in the first season after establishment.



Relative growth curve of an established Poorman's Lucerne stand - one year cycle

Metabolic disturbances in animals on cultivated pastures:

No metabolic disturbances have been recorded

Establishment

Climate: Poor man's Lucerne is widely adapted to various climatic conditions.

Moisture: Under dryland conditions it requires at least 550 mm per annum, but production can be greatly increased at a higher rainfall.





Soil: Best suited to well-drained clay, sandy loam and deep sand, but widely adapted and can even grow on shallow soils with restricted drainage. It is more tolerant to low pH soils and low fertility (especially low P-levels) compared to other forage legumes like Lucerne and Clover, but will have a good response to lime applications. A soil pH (KCl) of > 5.5 is recommended to ensure optimal growth for both plant and its bacterial symbionts. Poor man's Lucerne can however grow at pH (KCl) levels as low as 4.5.

Fertilization: It is a legume and therefore fixes atmospheric N into an available form of N. For this reason, no N should be applied when cultivating this crop. A soil analysis before establishment is essential ^(1, 2, 3).

	N (kg/ha)	P (mg/kg soil)	K (mg/kg soil)
Requirement for establishment*	0	30	120
Seasonal application (kg/ha)	0**	Use removal rates	
Production - Removal rates (kg/ton):			
Good quality fodder	31	3.6	30
Average quality fodder	24	2.8	20
Poor quality fodder	17	2	12

* Determined by production potential

**Fixed from atmospheric-N in symbiosis with *Rhizobium*

Phosphorus (P) and potassium (K) can be recycled back to pastures when grazed by animals ⁽⁵⁾. This depends on the grazing system and the type of animals used. Up to 40% of P and 90% of K can be recycled. It is however necessary to do an annual soil analysis to determine the level to which recycling occurred. The difference should be fertilized.

Methods: Establish on a firm, fine, weed free seed bed. Consolidating (rolling) the seedbed after sowing/planting will ensure good seed-soil contact and subsequently better germination and establishment.





Seed must be inoculated with the correct bacteria before planting. Due to the small seed size, it is advisable to not plant seed deeper than 5 mm. Moisture availability determines the rate of germination.

Our prescribed seeding rate:

	Rows ^(1, 2)		Broadcast ^(1, 2)	
	Uncoated	AgriCOTE®	Uncoated	AgriCOTE®
	10-15 kg/ha	10-15 kg/ha	15-25 kg/ha	15-25 kg/ha

Planting time:

Due to slow establishment rate and sensitivity of seedlings to frost, the best planting time is in spring when frost is not a risk anymore. It can however be planted anytime between November and February, whenever rainfall is most reliable. Poor man’s Lucerne establishes very slowly and farmers may have to be patient for up to 3 years after planting.

Management

Harvesting:

After the first killing frost in late autumn or winter, on an established stand, planted the previous spring, a clean-up harvest can be done to get rid of all weeds. At this time the root system will be strongly developed. Leaving foliage of 10 cm above ground will ensure quick regrowth. Allow plants to make seed every three years, and prevent late autumn utilisation. Cut when plants are 35 – 50 cm tall. Cutting plants at a later stage than this will result in poor quality hay.





Cultivars

AU Lotan

Newer cultivars like AU Lotan are selected for better palatability (low tannins and high digestibility) and subsequently better animal production. It has thin, fine stems that cure quickly. It is resistant to three species of root-knot nematodes.

Resources

1. Pasture Handbook, Kejafa Knowledge Works, ISBN 0-620-31994-1
2. Gids tot die volhoubare produksie van weiding. Alles oor natuurlike veld en aangeplante weiding vir kleinvee, grootvee en wildboere. Prof Hennie Snyman, 2012.
3. Feedipedia – Sericea (*Lespedeza cuneata*) - <http://www.feedipedia.org/node/12574>
4. Goat Pastures *Sericea lespedeza*, extension, Goats July 02 2014.
5. Dannhauser CS. 1991. Die bestuur van aangeplante weiding in die somerreënvaldele, vol. 1. Warmbad
6. Alabama A & M and Auburn Universities. *Sericea Lespedeza*. A Pasture, Hay and Conservation Plant. ANR 1318
7. Truter, WF. Dannhauser, CS, Smith, H. and Trytsman, G. 2014. *Lespedeza cuneata / Sericea lespedeza* (Poor man's lucerne). Integrated Crop and Pasture-based livestock production systems. Conservation Agriculture – Part 13. SA Grain. ISSN 1814-1676. Page 85-87.

