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Serradella – *Ornithopus spp.*

Serradella is an annual, prostrate growing legume. Two species are commonly available, namely *Ornithopus sativus* (Common/ French/ Pink Serradella) and *Ornithopus compressus* (Yellow Serradella). These species' main growing periods are in Autumn, Winter and Spring and are suitable for use as grazing, hay and silage. Its substantially deep root system makes it tolerant to heavy grazing, if managed correctly. The minimum rainfall requirement for these species is 400mm per annum and distribution should correlate with the crop's production curve. Stands under irrigation show improved growth, when soils can freely drain.



Strengths

- 6 t DM/ha/season
Depending on environmental conditions and management
- Fixes atmospheric
- Adds quality to grass pastures
- Low bloating occurrence
- Very palatable and nutritious forage
- Persistent by reseeding
- Tolerates high levels of soil Al (30%) and low soil pH

Limitations

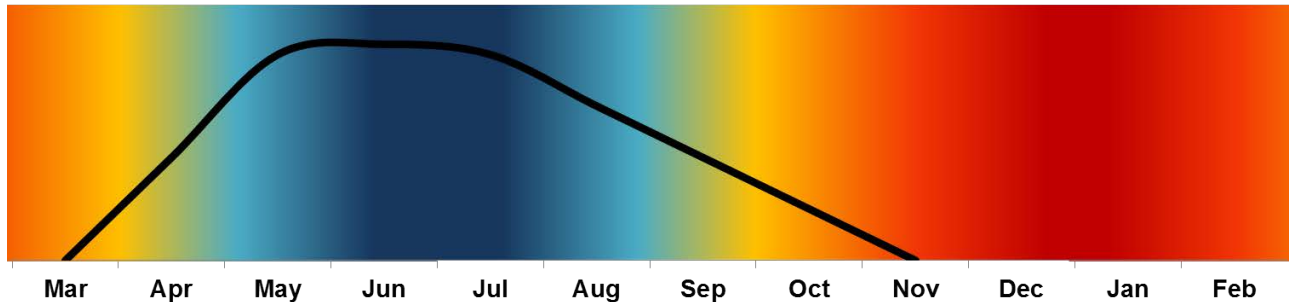
- Not suited to clay or clay loam soils
- Short growing season
- Does not tolerate prolonged waterlogged conditions



What can it be used for?

Grazing: Ideal winter grazing under moderate grazing pressure.

Production potential: A production potential of 6 t DM/ha/season can be achieved, but is dependent on soil fertility, environmental conditions and frequency of utilisation.



Relative growth curve of a Serradella stand - over one year

Metabolic disturbances in animals on cultivated pastures:

Frothy Bloat: Build-up of gas in the rumen due to stable foam forming, causing animals to suffocate.

Establishment

Climate: Serradella is widely adapted, but is most suited to cool winter rainfall areas.

Moisture: Under dry land conditions it requires at least 400 mm per annum.

Soil: It is widely adapted, especially to acidic soils. Well drained soils with a soil pH (KCl) between 5.5 and 6.5 is recommended to ensure optimal growth for both plant and its bacterial symbionts. It can however tolerate pH (KCl) levels as low as 4 and Aluminium up to 35% of CEC. Hard-setting soils can be problematic to serradella plants.

Fertilization: Serradella is a legume and therefore fixes atmospheric N into a usable form of N. For this reason, no N should be applied when cultivating this crop. A soil analysis before establishment is essential.



SEED



SEED TREATMENT



FORAGE

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LAND REHABILITATION



COVER CROPS



Advance Seed

	N (kg/ha)	P (mg/kg soil)	K (mg/kg soil)
Requirement for establishment*	0	25	80-100
Seasonal application (kg/ha)	0**	Use removal rates	
Production - Removal rates (kg/ton):			
Good quality fodder	40	3.2	31
Average quality fodder	31	2.6	24
Poor quality fodder	19	2	17

* 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. This is dependent on the grazing system and the type of animals used. Up to 40% of P and 90% of K can be recycled ⁽⁵⁾. It is however necessary to do 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.

Our prescribed seeding rate:	Blends	Pure
	15 - 25 kg/ha	25 kg/ha

Planting time: The best time to establish Serradella is from March to May. In a blend the best time to plant should correspond with the planting time of the main component of the blend.

Management

Utilisation: Serradella utilisation can be managed to optimize regrowth, in which case it should be utilized (cut or grazed) before the onset of flowering. It can also be managed to create a persistent stand. Due to the prolific seed production, stands can be left to flower and produce seed. To prevent a build-up of moribund material, utilize the excess.



SEED



SEED TREATMENT



FORAGE

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LAND REHABILITATION



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Advance Seed

Resources

1. Pasture Handbook, Kejafa Knowledge Works, ISBN 0-620-31994-1
2. Fodder legumes in the summer rainfall areas of Southern Africa – Dr. CS Dannhauser - SANSOR
3. Gids tot die volhoubare produksie van weiding. Alles oor natuurlike veld en aangeplante weiding vir kleinvee, grootvee en wildboere. Prof Hennie Snyman, 2012.
4. NSW Department of Primary Industries
5. Yellow Serradella - <http://www.dpi.nsw.gov.au/agriculture/pastures/pastures-and-rangelands/species-varieties/factsheets/yellow-serradella-272>
6. French Serradella - <http://www.dpi.nsw.gov.au/agriculture/pastures/pastures-and-rangelands/species-varieties/temperate-legumes/french-serradella>
7. Dannhauser CS. 1991. Die bestuur van aangeplante weiding in die somerreënval-dele, vol. 1. Warmbad



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