pastures australia
A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

Yellow serradella

Scientific name(s)

Ornithopus compressus

Strengths

- A nutritious, palatable, persistent legume
- Tolerant of acid soils with high levels of aluminium
- Well adapted to infertile deep sandy soils
- Drought tolerant (deeper- root system than subterranean clover and pink serradella)
- Tolerates heavy grazing
- Low bloat risk
- Extremely tolerant of aphids, lucerne flea and red-legged earth mite at adult stage
- Very high level of hard seed gives protection against false breaks
- Competes well with weeds
- Makes good quality hay and silage
- Efficient nitrogen fixer
- A number of suitable herbicides for weed control

Limitations

- Not suited to alkaline soils
- Not tolerant of high levels of exchangeable manganese in acid soils
- Requires companion summer-growing species for all-year-round paddock production
- Establishment can be slow if sowing with 'hard seed' and low sowing rates
- Not suited to soils subject to prolonged waterlogging
- Susceptible to heliothis
- High seed cost

Plant description

Plant: Many-branched, finely hairy, annual legume, with a low (to 40cm), spreading growth habit with main growth in autumn, winter and spring. Deeper rooted than subterranean clover and pink serradella.

Stems: slender densely leafy stems, covered with fine, short white hairs.

Leaves: Leaves also with fine, short white hairs, comprising 10 to 20 pairs of oblong-elliptical leaflets long and a single terminal leaflet, about 10 mm, up to l cm long

Flowers: Yellow pea-like flowers, about 5mm long, borne singly or in groups of up to 5 on stems jutting out from the leaves.

Pods: flattened, 2.5-4.0 cm long and 3mm wide, curved tapering into a hooked beak, splitting into 5 - 9 single-seeded segments at maturity; hard and blackish when ripe.

Seeds: yellow, oblong and flattened; about 176,000/kg (unhulled), or 352,000/kg (hulled).

Pasture type and use

Mainly used as a pasture plant, and suited for grazing, hay or silage. Useful as a pasture lasting 1-5 years as part of a phased pasture crop rotation. Will regenerate from seed after a short cropping period of 1-3 years. Can also be used as a longer term pasture in mixtures with perennial or annual grasses.

Where it grows

Rainfall

Yellow serradella is best suited to regions with 250 - 700 mm annual rainfall with a predominantly autumn-winter-spring distribution and relatively little summer rain.

Soils

It is best on deep, well-drained lighter to medium loam soils. While there are some variety differences, it is well-adapted to acid soils tolerating exchangeable aluminium of 35% of CEC (cation exchange capacity) or more. It is not well-adapted to soils with pH above 7.0 (CaCl2). It is very persistent on difficult light soils.

Temperature

Moderate frost tolerance.

Establishment

Companion species

Grasses: Italian ryegrass, consol lovegrass and Premier digit grass

Legumes: subterranean clover, gland clover, rose clover, biserrula

Sowing/planting rates as single species

5 - 7 kg/ha. It is very important to sow yellow serradella at a depth of less than 2 cm to obtain optimal establishment.

Sowing/planting rates in mixtures

1 - 5 kg/ha, depending on the mixture of pasture legume options available.

Sowing time

Yellow serradella should be sown as close to the break of season in autumn as possible.

Inoculation

Lupin/serradella inoculum (Group G or Group S, according to the source).

Fertiliser

Sow with 100 to 150 kg/ha superphosphate, or super/potash if on sandy soils

Management

Maintenance fertliser

Grazing/cutting

Experience has shown yellow serradella to be as tolerant as subterranean clover to heavy grazing. However, it is important not to graze too hard during flowering, especially until seed reserves have built up. Under heavy winter grazing, yellow serradella adopts a prostrate growth habit, which protects it from over-grazing. It is very productive in spring, and hay or silage can be produced.

Seed production

It is a prolific seed producer, with seed yields ranging from 2 - 4 t/ha of pods. Seed is harvested using a conventional open-front grain harvester, preferably with a finger-reel. The pods require further treatments as the seed left inside the pods is hard seeded and will have germination rates of less than 10%. Yellow serradella must be dehulled and scarified in order to obtain the highly germinable seed that is best suited for pasture establishment.

See AGWEST Farnote No. 62/2003 "Serradella-growing and harvesting the seed"

Ability to spread

Generally limited. However, under intensive summer grazing, a small amount of seed may be

eaten, and some of this is excreted in a viable form.

Weed potential

There have been no reported cases of yellow serradella spreading into native vegetation.

Major pests

Red-legged earth mites can cause damage until plants have three true leaves, and should be controlled. For seed crops, inspect for native bud worm (heliothis) and control if present in large numbers. Yellow serradella is not affected by lucerne flea and aphids.

Major diseases

Very few disease problems have been observed, although potential diseases include leaf spots, grey mould, and anthracnose.

Herbicide susceptibility

Grass weeds can usually be controlled with a selective herbicide. Broadstrike® (Flumetsulam), Spinnaker® (Imazethapyr), Raptor® (Imazamox) are registered for use in serradella pasture to control or suppress a variety of broad-leaved weeds. Yellow serradella is not tolerant of Simazine, Diuron, Sufonyl Ureas, Phenoxy herbicides and non selective knockdowns.

Animal production

Feeding value

Yellow serradella produces high quality forage in terms of dry matter digestibility, metabolisable energy (ME) and crude protein (CP). Levels of crude protein in the vegetative stage are typically around 25%, and of ME about 11.5 MJ/kg.

Palatability

Highly palatable

Production potential

Spring herbage yields of yellow serradella in Western Australia can be as high as 10 t/ha, which compares favourably with French serradella, biserrula and subterranean clover. It can provide green feed for an extra 2 to 4 weeks more than subterranean clover.

Livestock disorders/toxicity

No problems reported.

Cultivars

Select cultivars on the basis of maturity, hard-seed levels and tolerance to soil aluminium.

Group	Cultivar	Seed source/Information
Very early season, high hard-seed levels	Yelbeni	Guide to Australian Pasture Legumes Teague Australia Seed Distributors
Early season, high hard-seed levels	Charano Ф	Seedmark PlantTech
	Santorini	Seedmark Teague Australia Irwin Hunter & Co
Early season, medium hard-seed levels	King	Guide to Australian Pasture Legumes Teague Australia
Early-mid season, high hard-seed levels	Madeira	Australian Herbage Plant Cultivars WA Department of Agriculture & Food - Farmnote 30/98
	Elgara	Australian Herbage Plant Cultivars
Mid-late season, high hard-seed levels	Avila	Australian Herbage Plant Cultivars Teague Australia

Denotes that this variety is protected by Plant Breeder's Rights Australia

Further information

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