

YELLOW SERRADELLA

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"A probable worsening of the cost/price ratio for animal products indicates that future pasture research should concentrate on devising low cost management systems rather than increasing pasture or animal production irrespective of input costs" (Whalley, 1980).

Acid soils cover extensive areas of New South Wales. Highly acid soils occur in the Pilliga Scrub and also large tracts around Coonabarabran, Coolah, Binnaway, Mendooran and Tomingley. Often these soils are inherently infertile with poor physical condition and difficult moisture relationships. It is unlikely that they can sustain continued cropping due to the strong possibility of erosion and the inevitable rundown of soil organic matter. Therefore, it is essential to incorporate a pasture phase in crop rotations. There are few, or no, naturalized legumes, and introduced legumes have in the past, failed. Consequently herbage production is low and of limited nutritive value. Soil acidity and aluminium toxicity interfere with plant growth and legume nodulation. On high aluminium soils, dry matter production from sub clover has been dismal.

The need to improve carrying capacity and to reduce the cost of pasture production on acid soils warrants the investigation of a persistent, acid tolerant legume which will alleviate the cost of high levels of liming. Yellow serradella has demonstrated its ability to persist on the well drained, deep, acid soils throughout New South Wales. Commercial stands are over ten years old and persisting well.

Serradella contains many desirable attributes for an annual pasture legume on these soils:

- \* The ability to persist where surface soil acidity is high and where acidity occurs at depth in the profile.
- \* It contains no known oestrogens or toxins to grazing stock.
- \* It is non-bloating.
- \* Tolerance of high levels of soluble aluminium.
- \* Demonstrated drought hardiness as a seedling.
- \* High levels of hard seededness.
- \* Relatively low fertilizer requirement.
- \* Indeterminant flowering habit, enabling extended feed production in the event of favourable seasons.
- \* Readily available, effective rhizobium which remains viable under acid conditions.
- \* Low disease incidence and insect attack.

Through its high degree of hard-seededness, low fertilizer requirement, tolerance of insect and disease attack, the ability to fix nitrogen in those soils that are deficient in available nitrogen, and the ability to persist where other legumes have failed, serradella is one of the most promising low cost avenues for improving production from the deep acid soils in New South Wales.

Whalley, R.D.B. (1980). The management of Australian pastures. In Proceedings of the Australian Agronomy Conference, Lawes, April 1980. pp.1-14.