



New Pasture Legumes for Grazing, Forage and Crop Rotations

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With the increasing cost of nitrogen fertiliser and the continuing run-down of soil organic matter, pasture legumes offer an attractive alternative in their crop rotations.

Sulla (*Hedysarum coronarium*) also known as French Honeysuckle, Sweet Vetch, Italian or Spanish Sainfoin is a short lived perennial legume from the Mediterranean. It is a highly productive, non-bloating, palatable, good quality legume suitable for grazing, hay or silage. It is also reported to have a “by-pass protein” effect giving an extra 10-15% liveweight gain, an anthelmintic effect (reducing parasites), increase ovulation rates and reduce fly strike (reduced scouring) in sheep.

Ideally it should be sown in early autumn at 5-10 kg/ha at 1cm deep into a fine, weed free seed bed. Sulla prefers well drained alkaline soils and seems to do best on the heavier soils. Early growth is slow as the plants form rosettes and produce long tap roots. However, Sulla can grow to 1.5 metres in height, but does require strict rotational grazing. Sulla also makes good hay because it does not drop its leaf as readily as lucerne and makes excellent silage being more of a forage plant. Wrightson seeds are increasing 2 new cultivars selected in Australia. Wilpena is the more upright line and is more suited for forage production, while Moonbi is semi-erect and suited to grazing and forage use. A third cultivar, Flamenco, has been released in WA. Previously seed of Aokau and Necton were imported from New Zealand.

Sainfoin (*Onobrychis viciaefolia*) is an upright perennial forage legume. It is extremely palatable, non-bloating, resistant to spotted alfalfa aphid, deep rooted and has drought and winter hardiness. It grows in sandy to heavy, alkaline soils that are not water-logged or saline. It must be rotationally grazed and makes good hay. Sow at 7-10 kg/ha but seed may be hard to obtain.

Angel strand medic is tolerant of sulfonylurea (SU) residues and was released in SA for the neutral to alkaline sands and loams with low to medium rainfall where SU residues often persist. It is a selection from Herald and has tolerance to aphids. Seed will be available in 2007 and is sown at 3-6 kg/ha.

Toreador (disc/strand medic) is a new hybrid developed for the light, sandy low rainfall country of South Australia but is doing well even on heavy black soils at Moree. It is early maturing, flowering in less than 3 months, which should allow it to set seed in most years, but still gave high production and it has spineless pods. Sow at 2-5 kg/ha.

Spineless burr medic. Scimitar is a newly released cultivar selected from Santiago for softer seeds and better production. It is early maturing like most burr medics, flowering in 3 months and is more productive and one week earlier flowering than Cavalier another spineless burr medic. Sow at 3-6 kg/ha.

Jester barrel medic is an improved selection of Jemalong for blue-green and spotted alfalfa aphid resistance. Flowers in 104 days, a bit later than Scimitar (burr medic) and Caliph, but again highly productive. Jemalong was a very successful cultivar before the aphids arrived. Sow at 3-6 kg/ha.

Lotus ornithopodioides is an annual, early maturing species that is non-bloating and adapted to alkaline to slightly acidic soils. Seed is not yet available but could be within 2 years. Being early maturing (it flowers in less than 100 days at Tamworth) allows it to grow in lower rainfall areas than the perennial species grown on the coast and tablelands.

Purple Clover is a new tall growing narrow-leaved clover that has the potential to yield over 10 tonnes of dry matter/ha. It is deep rooting, drought tolerant, late maturing and will tolerate short-term water-logging and acidic soils. Electra is the new cultivar released and has resistance to clover scorch disease and better harvestability. It is more suited to forage than continuous grazing. Little seed is expected to be available till 2008. Sow at 2-3 kg/ha

Arrowleaf clover is a late maturing annual suitable for grazing hay or forage production. It is a small seeded clover which produces a lot of seed that aids its dispersal. Although prostrate early, its later growth is erect with the plant having hollow stems. Is highly productive but will not tolerate water-logged soils. Cultivars are Zulu and Cefalu which flowers 1 week earlier than Zulu. Sowing rate is 1-3 kg/ha.

Sardi Rose clover has been selected for greater hard seededness and higher seed yields and hence persistence. It has wide soil adaptability and matures 1 week after Hykon rose.

New **sub clovers** cultivars with improved hard seededness and disease resistance include Izmir to replace Nungarin, Urana for Daliak, York for Seaton Park, Coolamon for Junee and Mintaro a more productive and persistent replacement for Rosedale on more alkaline soils.

Prima gland clover is a new species not previously available and its main advantage is resistance to red legged earth mite and other insects due to chemicals it contains. It has early-mid maturity flowering in 110 days and is very productive, due in part to the excellent stand density, achieved with a high seeding rate. Has small seed so sow at 1-3 kg/ha.

Frontier balansa clover, is an early maturing, highly productive clover adapted to a wide range of soil types and has excellent waterlogging tolerance. Sets a lot of seed and has good regeneration as long as competition is removed before the autumn break. Has small seed so sow at 1-3 kg/ha.

Yellow serradellas are plants best suited to acidic, low pH soils but do perform reasonably well on higher pH soils. They have high hard-seed levels that often give poor regeneration in the second year. There are many cultivars available ranging from Yelbini, a new very early maturing line (85 days to flower) through Charano, King and Santorini (110 days to flower) and later cultivars. Seed is difficult to dehull and so sow 1-3 kg/ha of clean seed or 5-10 of seed in pod.

Pink or French serradella. Cadiz is a productive soft-seeded cultivar that again although suited to acid soils is widely adapted to other soil types. The main problem with Cadiz is that the soft seeds germinate over summer and stands failed to persist. Two new hard seeded lines, Erica and Margurita, have now been released and should suit this environment and play an important role in pasture development, as serradellas are also non-bloating. The 2 new lines have about 50% hard seed by autumn and Erica is prostrate and Margurita more upright. They have also been selected for ease of harvesting and threshing.

Biserrula (*Biserrula pelecinus*) is a species suited to acidic, sandy soils and heavy grazing. It is deep rooted, hard seeded and drought tolerant, producing feed into late spring/early summer. It has mid season maturity with Casbah being about 1 week earlier than Mauro. Sow at 1-3 kg/ha.

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