Register of Australian Herbage Plant Cultivars

B. Legumes
8. Lucerne
a. Medicago sativa L. (lucerne)

cv. Hunter River
Reg. No. B-8a-1
Registered prior to December 1971

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Origin

Lucerne, introduced to Australia in the very early years of British settlement, proved particularly well suited to the alluvial flats of the Hunter and Peel river valleys in New South Wales (11). Its use in these areas increased rapidly, and by the mid-nineteenth century they had become the primary centre for the distribution of seed (11). Hunter River is derived by adaptation from these original populations.

The source of the early introductions into Australia is obscure but it seems most likely that they were of French seed, since at that time France was the most important European lucerne seed-producing country and supplied Great Britain's requirements (5). Hunter River seems most closely related to the French or Mediterranean-type Provence (12). It was first certified in South Australia in 1962-63.

Morphological description

A herbaceous perennial with a deeply penetrating and slightly branched tap root. Stems erect, quadrangular when young and sparsely pubescent; main branches arising at or near ground level and bases ultimately thickening to form a compact woody crown. The first leaf is unifoliate, subsequent ones trifoliate on pubescent petioles as long as or shorter than the leaflets. Leaflets vary in shape from narrow oblong to ovate usually more or less dentate near apex and with a mucronate tip, upper surface glabrous, lower slightly pubescent; centre leaflet usually slightly larger than the laterals. Stipules connate at base with free part long, triangular, and attenuate; pubescent on lower and glabrous on upper surface. Inflorescence of 20-30 flowers in dense axillary racemes on peduncles slightly longer than subtending leaf. Flowers purple and blue, on pedicels 1.5.2.0 mm long subtended by whitish linear bracteoles; calyx five-lobed, tubular portion about 3.0 mm long, slightly pubescent, lobes about 0.33 longer than tube. Pod indehiscent, spineless, and curled through 2-3 loose coils. Seeds 2-6 per pod, somewhat irregular in shape, subreniform to ovoid, yellow and about 440 000/kg to 500 000/kg.

Stems of Hunter River are thinner and finer than in varieties African, Du Puits, and Siro Peruvian; leaves slightly narrower and shorter than in Du Puits; and plants a little leafier than Du Puits and Siro Peruvian.

Agronomic characters (1-4, 6-10)

Hunter River is adapted to a wide range of environments and managements in the Mediterranean climate zone of southern Australia. It has only a little winter dormancy but is more frost-resistant than African or Siro Peruvian. It has a high degree of tolerance to hot dry summers and, with a well managed intermittent grazing regime, is very persistent under these conditions. Under continuous or too heavy intermittent grazing and in areas with predominantly summer rainfall survival is poor and may be limited to a few years.

It maintains good production throughout the year but is generally less productive than Siro Peruvian and African in winter and Du Puits in moderately warm summers for as long as the density of stands of these cultivars is maintained. It is relatively slow in early spring growth and whilst recovery after grazing and cutting is good it is probably not quite as rapid as in Siro Peruvian and African.

Flowering usually commences a few days after Siro Peruvian and African. The flowers have a high degree of self-incompatibility and insect pollination is required for profitable seed yields. Nodulates satisfactorily with *Rhizobium* strains U45 and SU47 which are contained in Australian

commercial inoculant ‘A’. It is moderately susceptible to leaf spot (*Pseudopeziza medicaginis*) and down mildew (*Peronospora trifoliarum*).

References

1. Cameron, D.G. (1966). New lucernes for Queensland. *Qd. Agric. J.* **92**, 553-5.
2. Campbell, G.B. (1966). Personal communication. Tasm. Dep. Agric., Hobart.
3. Daday, H. (1965). Performance of lucerne varieties on the South Coast of N.S.W. *Aust. J. Exp. Agric Anim. Husb*. **5**, 44-5.
4. Daday, H., Mottershead, B.E., and Rogers, V. (1961). Performance and interactions in varieties of lucerne (*Medicago sativa* L.). *Aust. J. Exp. Agric. Anim. Husb.* **1**,67-72.
5. Davis, A.G. (1950). Lucerne in France. *J. Br Grassld. Soc.* **5**, 47-62.
6. Doull, K.M. (1961). Studies on the efficiency of pollination of lucerne in South Australia. *Aust. J. Agric. Res.* **12**, 593-9.
7. Filan, F. (1964). The King of Fodders. N.S.W. Dep. Agric., Div. Plant. Ind. Bull. No. P233, (2nd ed.).
8. Launders, T.E. (1970). Production and persistence of six lucerne cultivars at Narrabri, New South Wales. *Aust. J. Exp. Agric. Anim. Husb.* **10**, 745-8
9. Leach, G.J. (1969). The Survival in South Australia of Hunter River, African and creeping lucernes after extended periods of severe grazing. *Aust. J. Exp. Agric. Anim. Husb.* **9**, 517-20.
10. Rogers, Veronica (1961). Lucerne variety trails at Deniliquin, N.S.W. *Aust. J. Exp. Agric. Anim. Husb.* **1**, 60-6.
11. Whitter, J.N. (1923). Chapter on Lucerne in *Grasses and Fodder Plants of N.S.W.*, by E. Breakwell, Dep. Agric., N.S.W. pp. 251-71. (Govt. Printer.)
12. Zaleski, A. (1954). Lucerne investigations. I. Identification and classification of lucerne varieties and strains. *J. Agric. Sci.***44**, 199-220.