

Urana – a new highly winter active subterranean clover

G. A. Sandral^A, B. S. Dear^A, P. Nichols^B, B. Wilson^A, C. Rodham^A, and J. Taylor^A

^ANSW Agriculture, Agricultural Institute, Wagga Wagga, NSW 2650

^BAgriculture Western Australia, Baron Hay Court, South Perth, WA

Abstract

Urana is a new early maturing subterranean clover (*Trifolium subterraneum* var. *subterraneum*) variety selected by the National Annual Pasture Legume Improvement Program as a replacement for Daliak. The main features of Urana are a flowering time between those of Dalkeith and Seaton Park, greater hard-seededness than Dalkeith, low formononetin content and slightly better seedling and adult plant resistance to red-legged earth mite than existing cultivars. Individual plants are very vigorous and this is manifested by its high herbage production potential (Sandral *et al.*, 1998). Herbage production of Urana was on most occasions substantially higher than Dalkeith.

Origin

Urana is derived from the cross 81S44 made by Dr. J.S. Gladstones in 1981. The pollen parent was the cross-bred line 75S13.8.1.1 (Dinninup//Daliak/Toodyay) and the seed parent was the cross-bred line 76S11.4.2 (CPI 65313B//Mt Helena A/Daglish).

Morphological description

Individual plants of Urana are very vigorous and produce larger leaves than other early flowering cultivars. It has no leaf mark, using the classification of Nichols *et al.* (1996). Leaflets do, however, produce a brown anthocyanin flush along the midrib under cold and other growth limiting conditions. Anthocyanin flecking is absent. Stipule pigmentation under closed canopies is weak. Calyx tubes have a purplish-red pigmentation along their distal half. Stems and peduncles are moderately hairy, while petioles and leaf upper surfaces have few hairs. Burr burial is moderately strong. Seed colour is black.

Adaptation

Urana is adapted to a wide range of soil types having being grown on light loamy and heavy clay soils. It has not performed well on deep sandy soils in Western Australia. In southern NSW it has been successfully grown in areas receiving between 350 and 475 mm annual rainfall. Urana flowers 5 to 10 days later than Dalkeith, has 5 to 10% higher hard seed levels at the autumn break and has high clover scorch and red legged earth mite resistance.

Productivity

Urana has been tested at Binya, Barellan, Condobolin, Morundah and Weethalle in southern NSW. At these sites over three years the seedling regeneration of Urana and Dalkeith was within 7% of each other. Production figures for both cultivars varied depending on the site and year. For example, seedling counts (m⁻²) varied from 295 to 3417 while dry matter production averaged over three years was 23% higher for the new cultivar Urana at Binya, 18% higher at Barellan, 7% higher at Condobolin and the same as Dalkeith at Morundah and Weethalle. Seed production of Urana was generally lower than that of Dalkeith although this had no effect on seedling recruitment or dry matter production in southern NSW.

Sowing

In low rainfall areas Urana can be undersown with 10 to 15 kg/ha of wheat. If Urana is the only undersown legume, its sowing rate should be 4-5 kg/ha, or less when mixed with other pasture legumes such as Nungarin, Dalkeith and Seaton Park subterranean clovers or Hykon rose clover.

Acknowledgments

The Grains Research and Development Corporation and Australian Wool Innovation limited provided financial support for the field evaluation of Urana within the National Annual Legume Pasture Improvement Program.

References

- Nichols, P.G.H., Collins, W.J. and Barbetti, M.J. (1996). Registered cultivars of subterranean clover - their characteristics, origin and identification. Bulletin No. 4327, Agriculture Western Australia.
- Sandral, G.A., Dear, B.S., Nichols, P.G.H., de Koning, C.T., Evans, P.M. and Lloyd, D.L. (1998). A comparative performance of early flowering subterranean clover genotypes. Proc. 9th Australian Agronomy Conference, Charles Sturt University, Wagga Wagga , New South Wales (D.L. Michalk and J.E. Pratley, eds), pp.181-184.