Register of Australian Herbage Plant Cultivars

B. Legumes
1. Clover
Trifolium ambiguum M. Bieb. (Caucasian clover) cv. Monaro

Reg. No. B-1g-6
Registered September 1983

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Origin

Monaro is a hexaploid line (6x = 48) selected from seed collected from the chernozem soil area at 690m in the Maikop region of Krasnodar province, USSR, and received as CPI 50329 in 1969. CPI 50329 was rigidly selcted in A.C.T. at medium elevation (1200m) in the Snowy Mountains region over two generations for 6 years by F.W. Hely and M. Zorin for effective nodulation, field resistance to clover stunt virus, survival under drought conditions, capacity to spread, and uniform flowering. Field tested and submitted for registration by B.S. Dear, Department of Agriculture, NSW, and M. Zorin, CSIRO, Division of Plant Industry. Breeders' seed will be maintained by the NSW Department of Agriculture. Registered, September 1983.

Morphological description (1,2)

A strongly rhizomatous perennial, producing many daughter plants vegetatively. Growth habit more erect than diploids (1). Leaflets petiolate, ovate, strongly veined with numerous fine marginal teeth which are larger at the base of the leaflet. All plants have a centrally located pale green V-shaped leaf mark. Leaflets in the field are typically 35mm long by 19mm wide with a length to width ratio of 1.86, which is smaller than cv. Treeline (2.15) but slightly larger than cv. Summit (1.56) and Forest (1.64). Laeflet area averages 644mm^2 which is similar to Prairie (2), the only other registered hexaploid cultivar, but larger than Summit (395mm^2), Forest (467mm^2) and Treeline (448mm^2). Petioles are green and smooth, sometimes slightly red. Stipules are semi-transparent, green to red and veined. Heads are capitate, solitary, dense, spheroid to ovoid, 2 – 25mm in length, 15 – 20mm in width, with a pale pink colour that deepens at maturity. Peduncles are approximately 60mm long. Seeds are larger than diploid lines with approximately 460 000 475 000 seeds/kg.

Agronomic characters (3-7)

An extremely vigorous form, being the most productive of all *T. ambiguum* lines tested in the field at 1150m (3). It also exhibits a high degree of persistence with 92% of plants alive after 4 years. At another site, elevation 915m, Monaro has survived three successive years with rainfall averaging 485mm. Flowering commences some two weeks later than diploid cultivars Summit and Forest. Approximately 67% of plants flowered at 36^{o}S compared with 6% for Prairie under the same conditions before summer drought stopped flowering. Monaro produced more daughter plants than any other tetraploid or hexaploid line, has a greater rhizome length and spreads to form a dense sward. In a glasshouse trial (4), Monaro ranked highly with respect to efficiency of P utilisation and had slightly lower internal and external P requirements (0.28%P), compared to Summit, Treeline and CPI 23277 (0.37 – 0.45%P). Nodulation in the field is satisfactory and leaflets have a nitrogen content of 2.6% which is similar to cv. Prairie but lower than Alpine (3.3%N). Nitrogen fixation is superior with CC286a than with other tested strains of *Rhizobium trifolii* (5,6).

Field studies over 8 years have shown that Monaro is more vigorous and more productive as a pasture than any other registered *T. ambiguum* cultivar. Compared to Prairie, it produces more daughter plants, spreads further, has a greater proportion of plants flowering and is more persistent. Monaro is seen as suitable for locations receiving some summer rainfall but where white clover persistence is poor due to periodic summer droughts. It is more persistent and productive than Prairie and CPI 23277 (3) at medium elevations (1150m) and more drought tolerant than Alpine at lower elevations (950m) (7).

References

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