

## An extension to the geographical sources of hardseededness in persian clover

E.J. Crawford

Department of Agriculture, Northfield Laboratories, South Australia

Persian clover (*Trifolium resupinatum* var. *majus*) is a valuable pasture species in the higher rainfall areas of southern Australia. Its production, digestibility and nutritive value have been highlighted in comparison with other cultivars by (11). However, 'Maral' is devoid of hardseeds and as such does not persist in pastures and has to be resown every year. Crawford (2), showed that several accessions of Persian clover have varying levels of hardseededness with similar agronomic attributes to 'Maral'. This resume summarises the performance of a further collection of accessions grown for the first time in South Australia and extends the geographical range in which hardseeded accessions had previously been reported.

### Method

Seed was planted in peat pellets in March, 1983, from which 25 seedlings of each were transferred to the field and compared with 'Maral' at Parafield Plant Introduction Centre. Flowering dates were recorded and each accession was rated relative to 'Maral' for apparent herbage production at 3-weekly intervals. Seed production was determined at maturity. In January, 1984, hand threshed seed samples were submitted for laboratory germination tests to determine initial levels of hardseededness.

### Results and Discussion

Of 57 accessions compared with 'Maral', 28 were received from the University of Florida, U.S.A., the true countries of origin of which are obscure. 19 of these were var. *majus* with relatively high levels of hardseed (63% plus). The remaining 29 accessions were from countries of known origin and their relative performance is summarised in Table I.

Table 1-Agronomic characteristics of 29 accessions of *T. resupinatum*, cf 'Maral'

Origin	var. <i>majus</i>	No. accessions	Flowering range (days)	Herbage production rating 24.10.83	Seed yield gram/plant*	Percent hardseeds
Greece	-	4	182-190	2-5	7.0 - 8.3	95-98
Iran	2	3	139-204	7-11	0.9 - 15.5	70-89
Iraq	1	3	154-173	15-16	10.8 - 20.6	75-92
Portugal	5	6	188-231	1-8	Tr - 2.2	24-35
Syria	-	5	87-165	4-13	0.7 - 13.4	86-99
Turkey	2	8	159-183	9-15	4.1 - 17.8	92-98
Portugal	1	cv Maral	190	10	Tr	2

\* Very late flowering accessions were watered but still seeded poorly.

Although this set of data extends the region recorded by (2) viz. from the Irano-Anatolian Sub-region to the eastern extremities of the Mediterranean Region, as a source of hardseededness in Persian clover, it is not constituted of var. *majus* as indicated by the relatively low herbage assessments.

Both var. *microcephalum* and var. *resupinatum* were recorded from the Peloponesos and near environs of southern Greece, whilst var. *resupinatum* was prominent in all other regions with relatively high levels of hardseededness.

The variability in flowering time, relative herbage and seed production and levels of hardseededness offer the agronomist ample material for selection of a range of cultivars that may be more persistent than 'Maral' in permanent pastures.

1. Reed, R.F.M., Kenny, P.T. and Flinn, P.C. (1980) Australian Society of Animal Production. Vol. XIII: 39-41.
2. Crawford, E.J. 1983) Australian Plant Breeding and Genetics Newsletter No. 33: 62-3.