

## **Development of spotted medics for Mediterranean farming systems.**

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Spotted medic (*Medicago arabica* L. Huds.) is found as a widely naturalised species in Australia, but to date has not been commercialised due to spiny pods. Although spiny pods are good for seed dispersal, it has cost the Australian wool industry heavily as a vegetable fault in wool clips. We measured the genetic diversity in the core collection (58 accessions) of *M. arabica* in the Australian *Medicago* Genetic Resources collection in a spaced plant trial at the Turretfield Research Station, South Australia, and assessed the agronomic performance of a selected cohort at Moree, New South Wales. There was large variation for traits including days to flowering, dry matter production, pod and seed yield and pod spininess. Two early flowering and high dry matter yielding accessions identified exhibited spiny pods. These two accessions were crossed with a smooth-podded accession, and the F<sub>1</sub> plants were confirmed using a microsatellite marker. Days to flowering showed a continuous pattern of variation in the F<sub>2</sub>, suggesting that the trait is quantitatively inherited, while segregation ratio revealed that a single recessive gene controlled the smooth pod trait. Early maturing, highly productive, smooth podded cultivars developed from this program will provide farmers with an additional choice for the pasture phase in the ley-farming system of south-eastern Australia, particularly in areas subjected to winter waterlogging.

### **References**

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