

***Stagonospora meliloti* and *Acrocalymma medicaginis* in
lucerne crowns and roots in eastern Australia**

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This study shows that lucerne crown and root rot caused by *Stagonospora meliloti* is prevalent in southern New South Wales, while *Acrocalymma medicaginis* is the more commonly observed pathogen in Queensland. While both pathogens cause reddening of internal root and crown tissue of lucerne, they can be distinguished based upon symptomatology. *S. meliloti* causes a diffuse red blotching of the internal tissue accompanied by the presence of an external lesion, whereas *A. medicaginis* causes red streaking at the extremity of wedge-shaped dry-rotted tissue. Inoculation of propagules of a susceptible lucerne clone indicated that *S. meliloti* was the more aggressive pathogen. While *A. medicaginis* does not cause leaf disease, there was a strong relationship between the leaf and root reaction of clones to *S. meliloti*. Inheritance of resistance to *S. meliloti* in lucerne appeared to be conditioned by a single dominant gene, based on segregations observed in S₁, and F₁ populations, but not in a backcross population from the same family where an excess of susceptible individuals (74% versus expected of 50%) was obtained in a cross of a resistant F₁ individual to the susceptible parent. Resistance appears to be highly heritable, however, and amenable to population improvement by breeding.