

The abundance of *Latrodectus katipo* is affected by vegetation type

Victoria Smith ^{*1}, Cor Vink ², Ruedi Nager ³, James Ross ¹, Adrian Paterson ¹

¹ Department of Ecology, Lincoln University, Lincoln 7647, Christchurch

² Canterbury Museum, Rolleston Avenue, Christchurch 8013

³ Faculty of Medical, Veterinary and Life Sciences, Graham Kerr Building, University of Glasgow, Scotland

Eligible for student prize

Our study examined the factors affecting the population abundance of *Latrodectus katipo* Powell, 1871, a declining spider species endemic to New Zealand. Comparisons were made of the abundance of *L. katipo* adjacent to two different plant species: the endemic sedge, pingao (*Ficinia spiralis* A. Rich.), and the exotic marram grass (*Ammophila arenaria* (L.) Link). In addition to the effects of marram versus pingao, seasonal effects on *L. katipo* abundance were examined. Using artificial cover objects (ACOs), presence/absence data were collected for *L. katipo*. Sixty ACOs were divided between Golden Bay, and two Canterbury locations, Kaitorete Spit and New Brighton, all areas with historical records of *L. katipo*. Thirty-three ACOs were placed adjacent to marram plants and 27 ACOs were placed adjacent to pingao plants. Kaitorete Spit was the principal study site examined due to the larger *L. katipo* population there. ACOs were checked for *L. katipo* presence every 15 days for two months per season, and for all four seasons at Kaitorete Spit and once per season for three seasons at New Brighton and Golden Bay. No *L. katipo* were found at Golden Bay or New Brighton. A GLMM indicated that finding *L. katipo* under ACOs adjacent to pingao as opposed to marram was between two and three times more probable ($P < 0.001$). *Latrodectus katipo* presence was also highest in summer. We conclude that conserving *L. katipo* will involve enhancing the amount of pingao in New Zealand's sand dunes.

