Seed germination ecology of *Sesbania cannibana* (Retz.) Poir.

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Summary Sesbania pea (*S. cannibana* (Retz.) Poir.), also known as yellow pea bush, is present in abundance along water channels and other wet areas in central and northern coastal regions of Australia. In cotton (*Gossypium hirsutum* L.), this weed is highly competitive and dramatically reduces cotton yield. It also creates a problem at harvest time due to the development of dense populations and its robust stature. Up till now, little information has been available concerning its seed production and germination ecology. Therefore, experiments were conducted in the laboratory and greenhouse to evaluate the impact of different environmental factors on its seed germination. Two populations of sesbania pea were collected from Saint George and the Dalby regions of south-east Queensland based on their differential rainfall patterns. Saint George is the low rainfall area while Dalby is the medium rainfall area. To overcome physical dormancy in the freshly harvested seed a hot water treatment (100°C for a period of 5 minutes) was used to promote seed germination. Highest germination was achieved under a temperature range of 30/20°C, and 35/25°C (alternating day/night temperature) for both populations. Germination was not affected by pH in the range of 7 to 10, however, below 6 there was poor germination. Sesbania pea showed salt tolerance of up to 50 mM NaCl but beyond that, germination was severely affected. In the greenhouse, both populations showed maximum germination at 1 cm burial depth and it decreased gradually with increasing burial depth up till 8 cm, and no seedling emerged more than 16 cm.

Keywords Seed germination, temperature, light, burial depth, salt stress.