Department of
Primary Industries and Regional Development

GOVERNMENT OF WESTERN AUSTRALIA

Environmental weed risk assessment

Lucerne, alfalfa (*Medicago sativa*)

Lucerne (alfalfa) is often called the 'queen of forages' and is one of the most important fodder crops in the world. Its nutritional properties, palatability and productivity make it the standard by which other fodders are compared. It is the most widely grown temperate perennial legume in the world and is also grown under irrigation in the Middle East.

Lucerne has been used with variable success across the Pilbara region under irrigation. Its productivity is typically reduced with high temperatures in the summer wet season and consequently it has been difficult to manage consistently over a 12-month period. The issues for growing lucerne in northern Western Australia (WA) mainly relate to the impact of high to extreme temperatures before the onset of the wet season and over summer, and the high humidity over the wet season in coastal and high rainfall zones on disease incidence and therefore persistence. Stand life is generally only 1–2 years. Cluster caterpillar (*Spodoptera litura*) has caused substantial damage in some Pilbara crops (Moore et al. 2021).

Weed lists

National-international:

- Not listed in Weeds of Australia (398 weed species) https://weeds.org.au/weeds-profiles/
- Not listed on the Weeds of Australia website Fact sheet Index (lucidcentral.org)
- In the Global Compendium of Weeds, lucerne is listed as an agricultural weed, casual alien, cultivation escape, environmental weed, garden thug, naturalised, weed (Randall 2017).

Western Australia:

- "…Cultivated as a perennial pasture plant especially in the southern agricultural regions. Found occasionally on roadsides in the metropolitan area and scattered throughout the lower south-west and east to Esperance and Norseman" (Hussey et al. 2007).
- Recorded as naturalised in the following IBRA Regions of WA - Carnarvon, Murchison, Geraldton Sandplains, Avon wheatbelt, Swan coastal plain, Jarrah forest, Coolgardie, Mallee, Esperance - Largely growing from spilt grain" (Keighery and Longman 2004).
- Not listed in Naturalised taxa recorded from conservation lands in Western Australia (Keighery 1991).

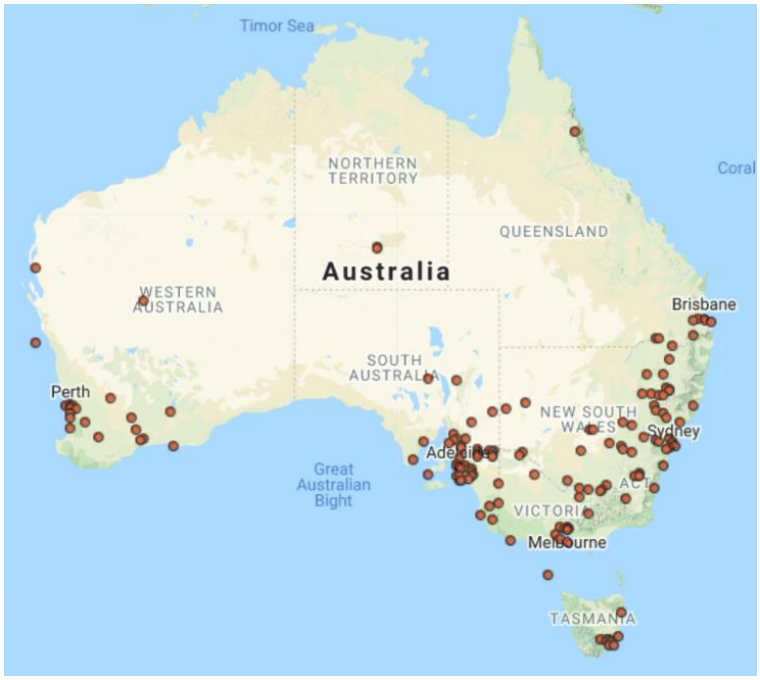

Figure 1 Distribution of lucerne (*Medicago sativa*) in Australia (Source: 'The Australasian Virtual Herbarium')

Environmental weed risk assessment

Assessed using the 'Environmental weed risk assessment protocol for growing non-indigenous plants in the Western Australian rangelands' (Moore et al. 2022)

Region	Filter A	Filter B	Weed Risk Assessment rating
	Is the species a weed in similar environments in Australia or overseas?	Is the species likely to persist in the environment without management*?	
Kimberley	No	No	**Negligible to low**
Pilbara	No	No	**Negligible to low**
Gascoyne – Goldfields	No	No	**Negligible to low**
Agricultural area	No	No	**Negligible to low**

*Without management means no fertiliser, Rhizobia, irrigation, grazing management or control of competition from other species

References

Hussey BMJ, Keighery GJ, Dodd J, Lloyd SG, Cousens RD (2007) 'Western weeds. A guide to the weeds of Western Australia'. Second Edition. The Weeds Society of Western Australia Inc.

Keighery GJ (1991) Environmental weeds of Western Australia. *Kowari*, **2:** 180-188.

Keighery G, Longman V (2004) The naturalized vascular plants of Western Australia 1: Checklist, environmental weeds and distribution in IBRA regions. *Plant Protection Quarterly*, **19(1):** 12-32.

Moore G, Revell C, Schelfhout C, Ham C, Crouch S (2021) 'Mosaic agriculture: a guide to irrigated crop and forage production in northern WA', Department of Primary Industries and Regional Development, Bulletin no. 4915, Perth.

Moore G, Munday C, Barua P (2022) 'Environmental weed risk assessment protocol for growing non-indigenous plants in the Western Australian rangelands', Department of Primary Industries and Regional Development, *Bulletin no. 4924*, Perth.

Randall RP (2017) 'Global compendium of weeds' (No. Ed. 3).

Weeds of Australia database https://keyserver.lucidcentral.org/weeds/data/media/Html/trifolium_repens.htm Site accessed 30 November 2021

Assessment by G Moore and N Nazeri
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Important disclaimer