

Parkinsonia biological control: Establishment, spread and impact of UU1 and UU2 across northern Australia

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Summary Parkinsonia (*Parkinsonia aculeata*) is a major weed of rangeland in northern Australia costing between \$2-\$300/ha/y to control depending on the density of infestations. Reducing control costs and improving pasture productivity can therefore assist in improving the profitability of rangeland production systems. Having a landscape-scale self-perpetuating form of control like biological control in these systems may aid in the integrated management of parkinsonia. This was the basis for the research pipeline of projects funded by Meat & Livestock Australia (B.NBP.0366; B.NBP.0620; B.WEE.0134) to identify candidate biological control agents and test their safety, mass rearing and release of agents that feed on parkinsonia but not on other plants. Currently the

program has released over > 1 million *Eueupithecia cisplatensis* (UU1) and 337,638 *Eueupithecia vollonoides* (UU2) both of which are leaf defoliating moths. Field assessments have been conducted to determine the establishment, spread and impact of UU1 and UU2 on parkinsonia across northern Australia since 2020. An online survey of land managers has also been conducted to better define the management expectations of biological program on parkinsonia. Management objectives and results of the laboratory and field assessments of UU1 and UU2 effectiveness in the field and future directions for parkinsonia biological control will be discussed.

Keywords *Parkinsonia aculeata*, biocontrol, stakeholder engagement, field release, establishment, spread