

EFFECTIVENESS OF BIOCONTROL OF *CARDUUS NUTANS* IN AUSTRALIA

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Rhinocyllus conicus and *Urophora solstitialis* were the first two agents introduced into Australia to control nodding thistle, *Carduus nutans*. Impact assessment data indicated that these two agents were unlikely to sufficiently reduce seeding under Australian conditions to result in population declines in nodding thistle. Consequently the rosette weevil *Trichosirocalus horridus* was released. The impact of this weevil was studied on a field population of nodding thistle in southern New South Wales, using forty 0.25 m² quadrats. Insect attack was prevented by regular application of the systemic insecticide Rogor to 20 of the quadrats. Rosette growth was measured at six weekly intervals throughout the autumn, winter and spring on all quadrats. Three destructive samples of 10 quadrats (5 attacked and 5 sprayed) were taken during the winter and spring, whilst the number and sizes of capitula on plants on the remaining quadrats were followed fortnightly throughout the flowering period from late spring until the plants died in summer. *T. horridus* had a great impact on both the vegetative and reproductive success of the plants. It killed about 50% of attacked rosettes, and greatly reduced the vegetative vigour of the surviving thistles. This weevil indirectly impacted on reproductive potential of the weed, with the attacked plants producing 30% of the seed observed in the control plants. Implications for the long-term control of nodding thistle are discussed.