DISTRIBUTION, IMPORTANCE AND MANAGEMENT OF 
SONCHUS OLERACEUS (COMMON SOWTHISTLE) IN THE 
NORTHERN CROPPING REGION OF AUSTRALIA

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Sonchus oleraceus (common sowthistle) has become a serious weed problem throughout the north-eastern cropping region of Australia. The emerging dominance of sowthistle as a weed of crop and fallow is thought to be as a consequence of a progressive shift from conventional to conservation farming systems. Fewer soil disturbance events under conservation farming has placed a heavy reliance on herbicide application for weed management. With incidences of herbicide resistance and alteration of the microclimate created under conservation farming, sowthistle has emerged as a difficult-to-control weed. Background information was sought on sowthistle in order to provide possible explanation as to why sowthistle has become a weed of such importance. This paper highlights responses from farmers and consultants to a survey aimed at providing information on the distribution, importance and management of sowthistle. A response rate of 41% to the 800 surveys sent out highlights farmer and consultant interest and recognition of sowthistle as a problem weed and allows for confidence in the survey results.

Analysis of the survey responses showed that sowthistle was uniformly distributed across the region from Tamworth to Emerald. The level of sowthistle infestation did, however, vary within the region. Sowthistle infestation was greatest on the Darling Downs of southern Queensland and through the North West Plains of northern New South Wales. Other major findings from the survey were that sowthistle:
• had increased predominantly over the last 5 years,
• was found to be of greater importance under zero tillage systems and of lesser importance under conventional tillage systems,
• infestation was greatest under both winter and summer fallow and winter cropping periods which were the most commonly utilised cropping systems amongst survey respondents,
• was less of a problem under summer cropping situations,
• contributed to green matter content at harvest and used valuable soil moisture during fallow periods, and
• was more difficult to control during fallow situations than during cropping.

Our results indicated that growers rely heavily on herbicides for sowthistle management and that these chemicals were perceived as having a high level of efficiency. Respondents that utilised both herbicide application and cultivation in sowthistle management perceived that both methods of weed management provided equal level of control. However, herbicides were used more frequently as they fit into the conservation farming ideal of minimising soil disturbance. Survey results demonstrated that there is a limited knowledge of alternative management options for sowthistle.

Anecdotal evidence that sowthistle has increased due to a shift from conventional to conservation farming, and indirectly through an increased use of herbicides, as well as its difficult-to-control nature, was supported by survey results. Survey findings contributed to subsequent experimentation investigating the ecology of sowthistle. Tillage effects on the emergence and depth of seed burial of sowthistle are being investigated, as are the effects of depth and period of seed burial on the seed bank dynamics of sowthistle. Morphology, phenology and herbicide response characteristics of sowthistle populations collected from various cropping and non-cropping systems in the north-eastern grain region are under examination. Information from this survey has contributed greatly towards devising an effective management system for sowthistle by providing vital insight into the distribution, importance and current management of this increasingly important weed.