



CARING
FOR
OUR
COUNTRY

Land management practice trends in Tasmania's horticulture industry



Introduction

Horticulture is an important industry in Tasmania which contributed almost 34 per cent to the gross value of agricultural production in the state, and 0.9 per cent to the gross value of Australia's agricultural production in 2009–10 (ABS 2011). Figure 1 shows the location of horticulture in Tasmania.

Improving soil condition is important for agricultural productivity and the quality of ecosystem services provided to the community from rural lands. Wind and water erosion, soil carbon rundown and soil acidification reduce the land's ability to provide productive soils, protect biodiversity, maintain clean air and water and withstand the effects of climate change, while producing food and fibre.

Caring for our Country—the Australian Government's \$2 billion flagship natural resource management initiative—is funding projects in the sustainable farm practices national priority area under the improving management practices and landscape scale conservation targets.

These projects provide information to farmers in the broadacre cropping, dairy, horticulture and beef cattle/sheep industries about land management practices that will help improve soil condition and contribute to maintaining a healthy environment.

By 30 May 2012, \$448 million had been approved for projects to improve soil and biodiversity management practices on farm. On farm practice change is monitored using the biennial Australian Bureau of Statistics (ABS) Agricultural Resource Management Survey (ARMS) which surveys 33 000 of Australia's 135 000 agricultural businesses (farmers). Results are reported at the national, state and natural resource management region levels (ABS 2009). The numbers reported were estimated from a sample of almost one quarter of all agricultural businesses, so the results are subject to sampling error. This is most pronounced for questions with lower response rates, which may be more likely in smaller industries such as horticulture. Data were not publishable for some practices in regions where the numbers of horticulture businesses were small.

Horticulture industry profile

According to ABS estimates, in 2009–10 Tasmania had an estimated 988 horticultural businesses, a decrease of almost 11 per cent since 2007–08. In 2009–10 the average age of Tasmanian managers of horticultural businesses was 51 years; on average they had

managed their holdings for 20 years and farmed in their local region for 26 years. An estimated 12 per cent of horticultural businesses (116) had a Landcare group member.

Figure 1

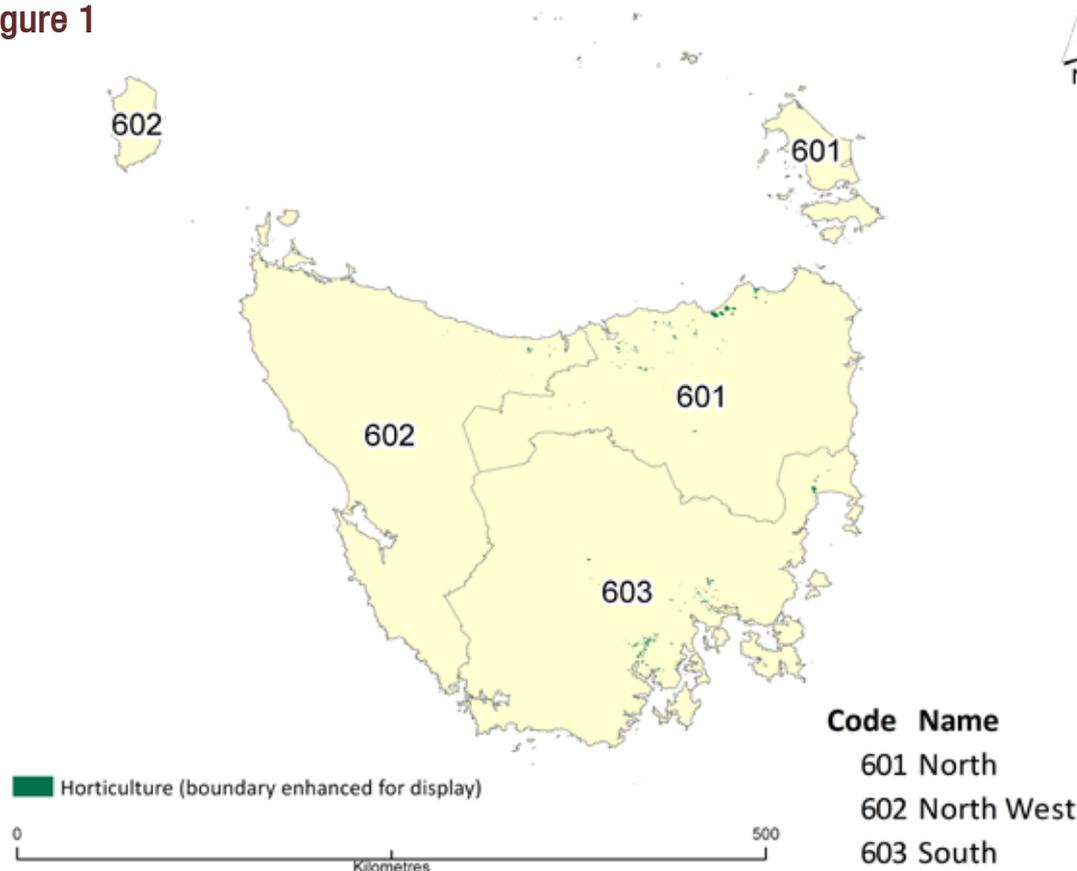


Figure 1. Horticulture in Tasmanian natural resource management regions. Boundaries have been greatly enhanced for display. Source: ABARE-BRS (2010).

Land management practices

Caring for our Country provided project funding to encourage farmers to better manage ground cover and to test and lime soils regularly where needed. This funding has complemented the activities of state agencies, industry and community groups. Data from the ABS 2007–08 and 2009–10 ARMS and the

1995–96 and 2000–01 agricultural censuses (which surveyed all agricultural businesses) help track trends in the adoption of these practices. The percentage of farmers reporting the use of particular practices can exceed 100 where more than one method (such as matting used to protect ground cover in some areas, cover crops in others) is used on a holding.

Managing soil acidity

About half of Australia's agricultural land has a surface soil pH of less than or equal to 5.5, which is below optimum for very acid sensitive agricultural crops and below the optimal level to prevent subsoil acidification (National Land and Water Resources Audit 2001). Where soil acidity moves further down the soil profile, damage may be irreparable. Very acid soils are also unlikely to support good ground cover, increasing the

risk of soil loss through wind and/or water erosion and reducing input to soil carbon. Areas at high risk are where soil pH is low, the soil has a low capacity to buffer against pH decreases and the dominant (current and/or past) agricultural practices are highly acidifying.

Regular testing of soil pH and applications of lime and/or dolomite can be used to manage acidification risk.

Figure 2

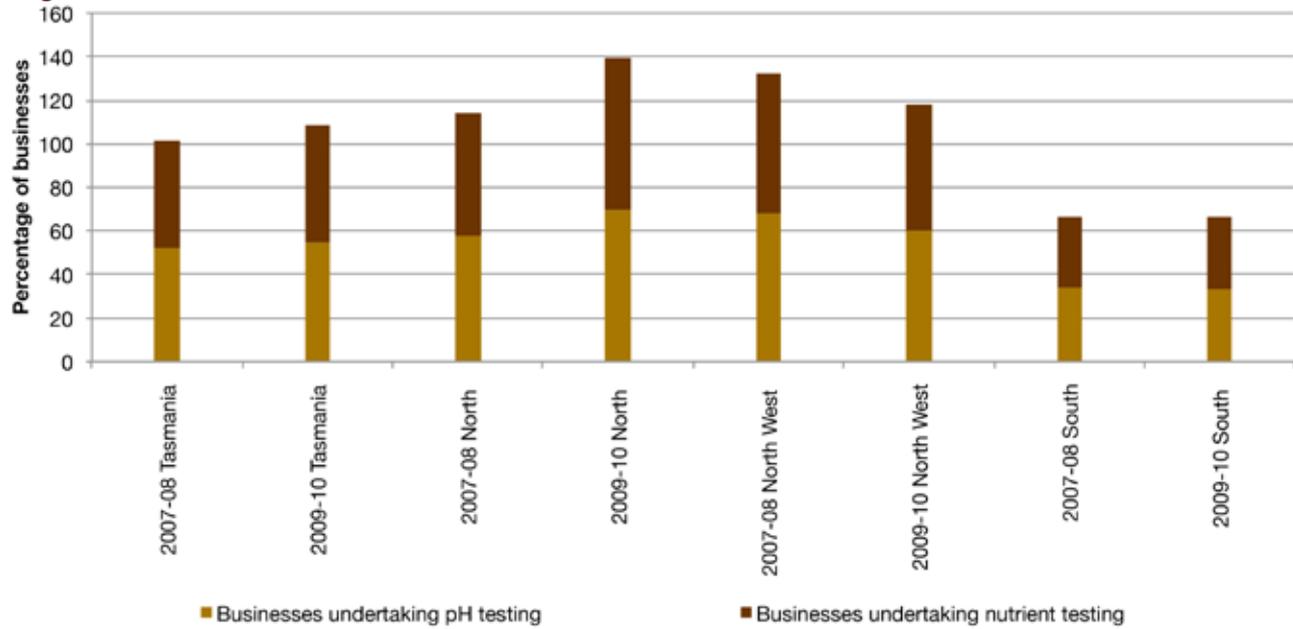


Figure 2. Percentage of horticultural businesses in Tasmanian natural resource management regions undertaking pH and nutrient soil testing, 2007-08 and 2009-10.

Figure 3

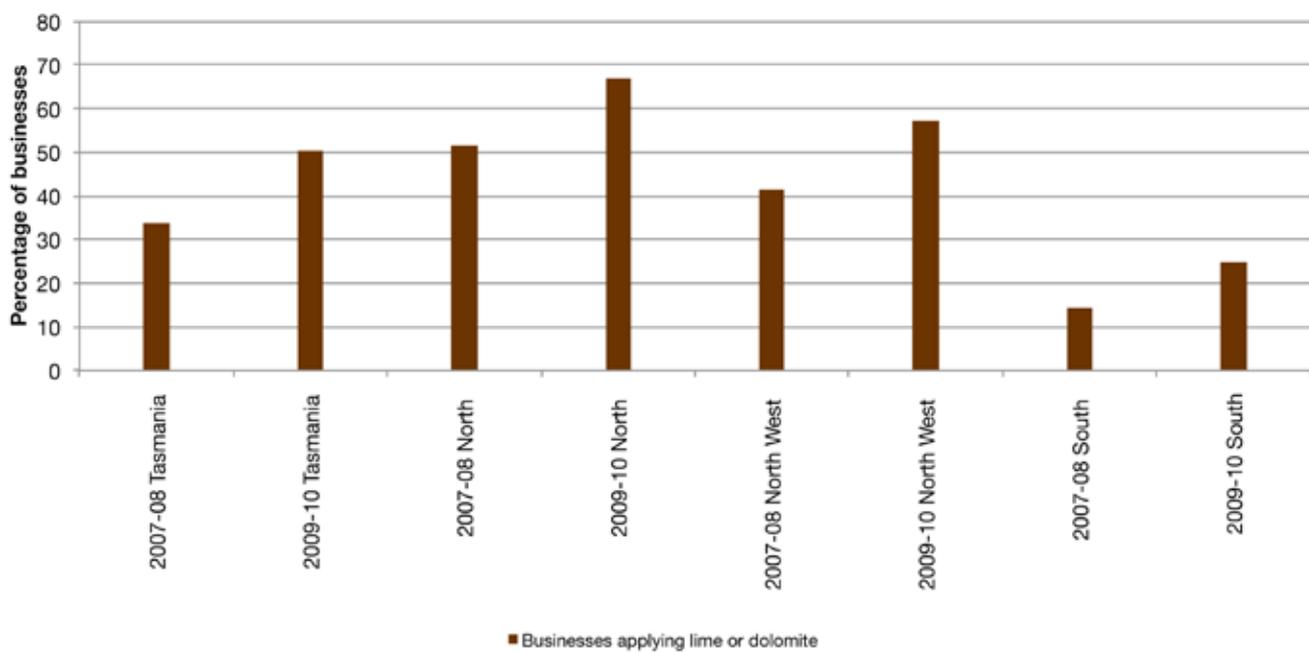


Figure 3. Percentage of horticultural businesses in Tasmanian natural resource management regions applying lime or dolomite to their holdings, 2007-08 and 2009-10.

Testing soil nutrient levels to better match fertiliser applications to crop requirements can also help slow soil acidification. There was an estimated increase (from 52 per cent to 55 per cent) in the percentage of Tasmanian horticultural businesses undertaking pH testing between 2007–08 and 2009–10. An estimated increase was reported for the North region (from 58 per cent to 70 per cent) and an estimated decrease was reported for the North West region (from 68 per cent to 61 per cent; Figure 2). The estimated percentage of Tasmanian horticultural businesses undertaking nutrient testing also increased slightly (from 50 per cent to 53 per cent); the largest increase was reported for the North region (from 57 per cent to 69 per cent; Figure 2).

The estimated percentage of Tasmania's horticultural businesses applying lime and/or dolomite to their holdings to manage soil acidity increased from 34 per cent to 50 per cent between 2007–08 and 2009–10. Estimated increases were reported in all three natural resource management regions, with the largest (from 41 per cent to 57 per cent) in the North West region (Figure 3). Longer term ABS data show that overall, the percentage of horticultural businesses in Tasmania applying lime or dolomite to their holdings to manage soil acidity increased from 1995–96 to 2009–10, although the level in 2009–10 is slightly down from its peak in 2000–01 (Figure 4). Table 1 shows the rates of lime and dolomite application for Tasmanian horticultural businesses in 2007–08.

Table 1

| | Tonnes (t) of lime applied | Lime application rate (t/ha) | Tonnes (t) of dolomite applied | Dolomite application rate (t/ha) |
|------------|----------------------------|------------------------------|--------------------------------|----------------------------------|
| Tasmania | 26 471 | 2.55 | 11 466 | 3.00 |
| North | 15 389 | 2.62 | 2 251 | 2.41 |
| North West | 9 409 | 2.45 | 8 425 | 3.26 |
| South | 1 673 | 2.47 | 7 91 | 2.61 |

Table 1. Lime and dolomite application by Tasmanian horticulture businesses on their holdings, 2007–08.

Figure 4

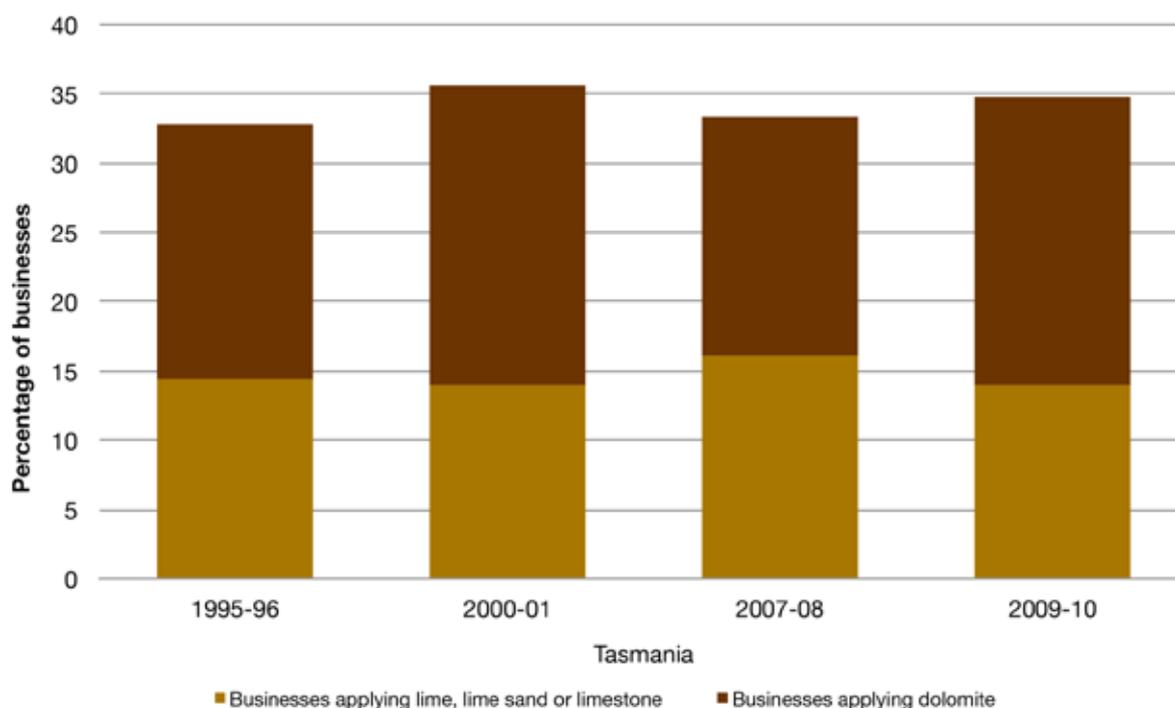


Figure 4. Percentage of horticultural businesses in Tasmania applying lime and dolomite to their holdings, 1995–96, 2000–01, 2007–08 and 2009–10. 2007–08 and 2009–10 data presented here are slightly different from that for Figure 3; different data items were used in the calculations to match the information collected in the censuses.

Maintaining ground cover

Using alternate or cover crops or mulching and/or matting between the main horticultural plantings helps protect against soil loss from wind and water erosion. Where organic mulches are used these may also contribute to building soil organic matter.

An estimated 44 per cent of horticulturalists in Tasmania used alternate or cover crops to maintain ground cover levels between their main horticultural plantings in 2009–10 and 19 per cent used mulching and or matting in the same period (Figure 5). The highest proportion of horticulturalists using alternate or cover crops was in the North region (62 per cent); the highest proportion using mulching and or matting was in the South region (29 per cent; Figure 5).

Figure 5

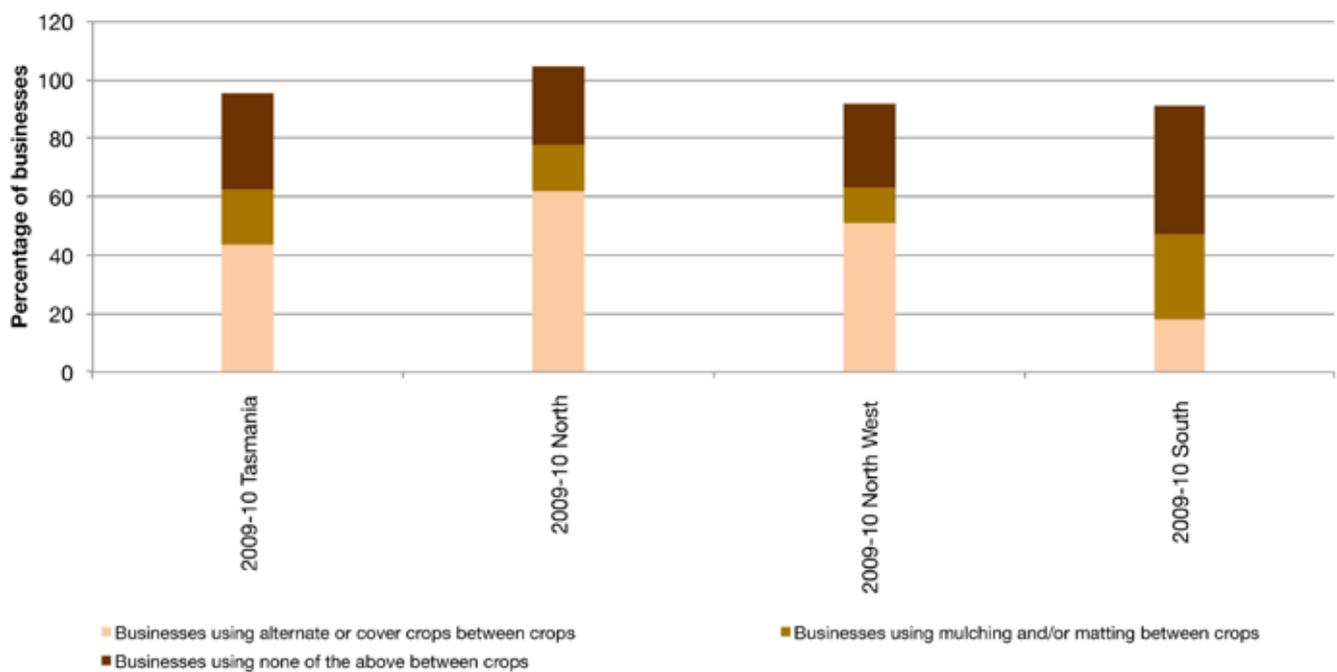


Figure 5. Percentage of horticultural businesses in Tasmanian natural resource management regions using different methods to maintain ground cover levels between horticultural plantings, 2009–10. No data are available for 2007–08.



Conclusions

The data suggest that in 2009–10 about half of all horticulturalists in Tasmania tested soil pH and nutrients and half applied lime or dolomite to manage soil acidity. Given the extensive and insidious nature of soil acidification, it may be necessary to increase soil testing and liming in some regions to protect against productivity losses and further pH decline.

In 2009–10 about two thirds of horticulturalists in Tasmania reported maintaining ground cover between their main plantings, using alternate or cover crops or mulching and/or matting. Some further work may be needed to establish whether suitable methods for ground cover management are available for all horticultural crops to identify opportunities for increasing the rates of adoption of this practice.

References

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