

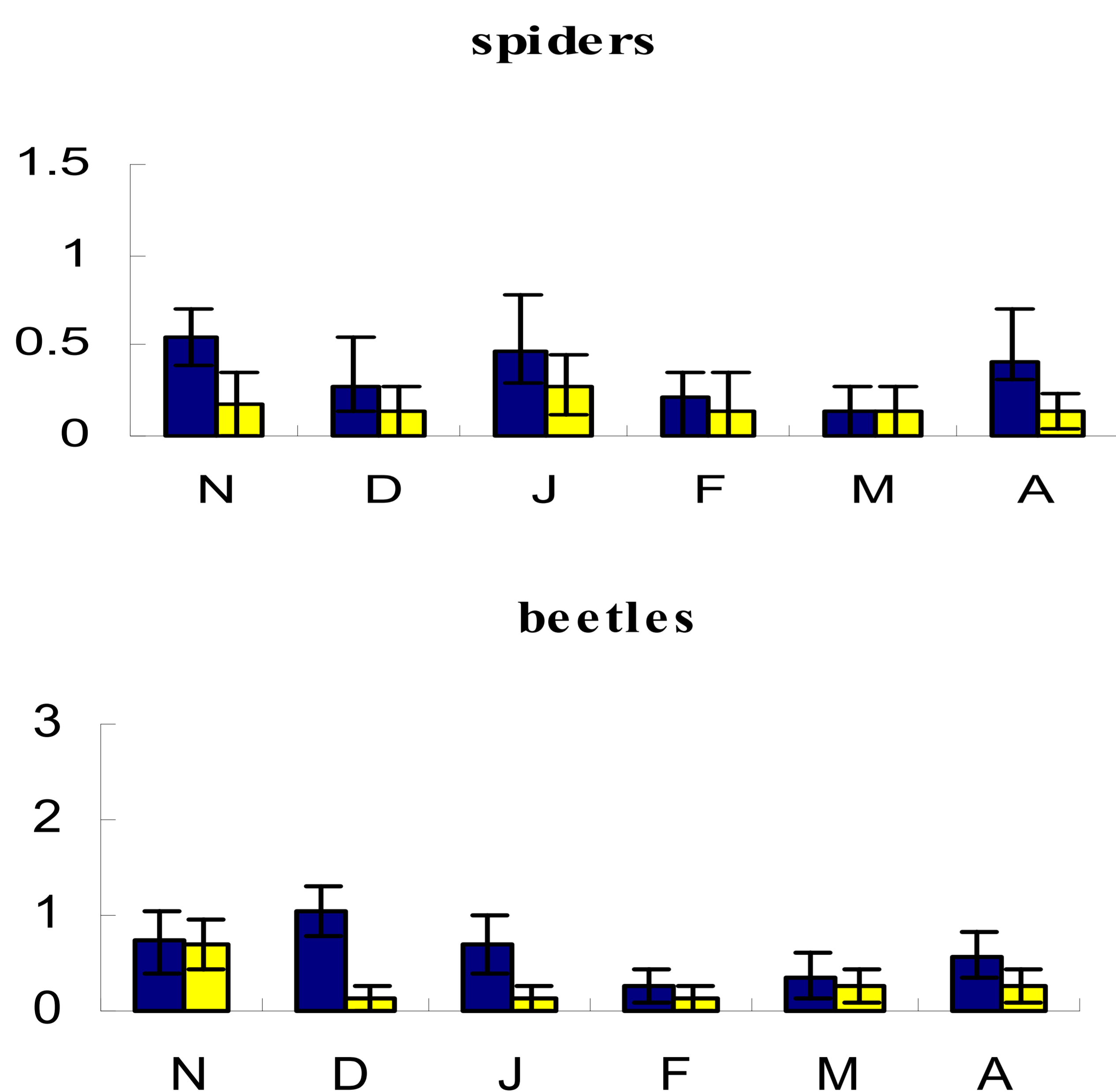
**A variety of trapping methods are being used to identify management practices in vineyards which support biodiversity, minimize the harmful effects of agriculture on the environment and increase the numbers of organisms involved in natural pest control**



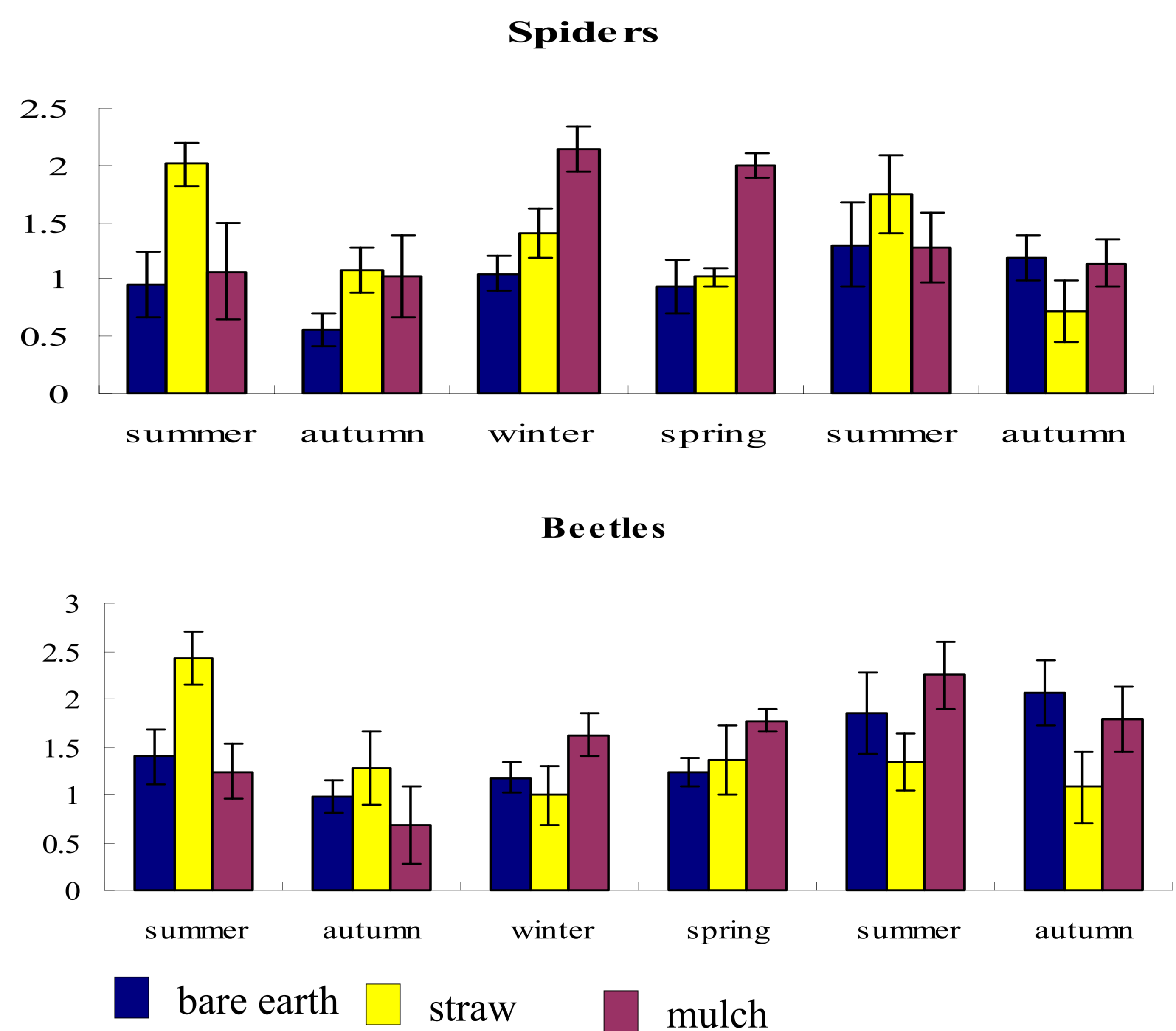
**Figure 1** Ground cover trial comparing effect of straw and compost to bare earth under herbicide treatment

**Figure 3 (a,b)**

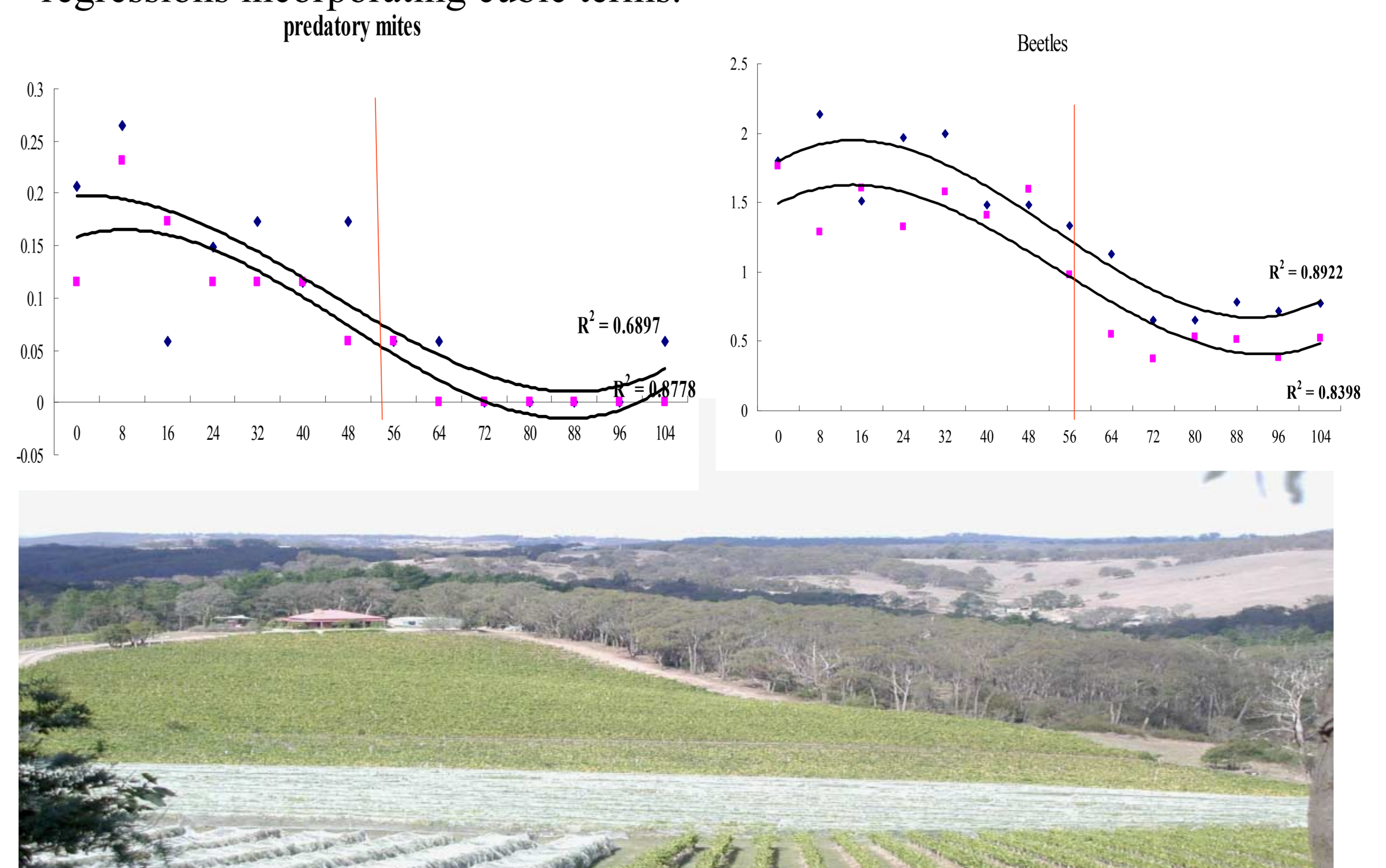
Irrigation trial comparing the effects of standard and reduced (PRD) irrigation. Numbers (log transformed) of spiders and beetles caught at ground level (pitfall traps) with reduced irrigation (Partial Rootzone Drying) compared to standard irrigation. Numbers represent average per trap and error bars represent standard errors. PRD decreased numbers collected.



**Figure 2 (a,b)** Responses of potential predators (spiders and beetles) to type of ground cover in different seasons in the Yarra Valley. Average numbers (log transformed) collected per pitfall trap are plotted by month. Error bars represent standard errors. There were significant effects of ground cover on numbers of invertebrates of different orders collected, and these changed with seasons and years. For example, spiders and beetles were collected more frequently with mulch in winter, spiders with straw in summer and beetles with straw in the first summer and mulch in the second, when compared to bare earth treatments.



**Figure 4.** Vegetation pictured below may increase numbers of predators such as beetles and predatory mites. Abundance (log transformed average per trap) at points 7 m apart in two transects (tr1, tr2) extending from remnant vegetation (left hand side) into a vineyard (right hand side). The boundary between the vineyard and remnant is at 56 m (line). Lines represent non-linear regressions incorporating cubic terms.



**Outcomes:**

**These results suggest that management practices influence invertebrate numbers in vineyards. Many of these effects can be beneficial, such as the increase in spider numbers with mulch and straw.**

**References:**

- Thomson, L.J.; Hoffmann, A.A. (2004) The effect of mulch and compost on the abundance and diversity of invertebrate orders. *Agric. Ecosyst. Environ.* in revision
- Thomson, L.J.; Neville, P.J.; Hoffmann, A.A. (2004) Effective trapping methods for assessing invertebrates in vineyards. *Aust. J. Exp. Agric.* In Press

The CRC for Viticulture is a joint venture between the following core participants, working with a wide range of supporting participants.

