

GREEN MULCHES: Notes on Nitrogen Fixing/for Attracting Beneficial Insects

Summary

Nurse grasses to aid clover germination

A replicated site in an Ashton Bitter orchard [Trials 92/4.7] was sown [April 1992] with three cultivars of white clover, *Trifolium repens* Huia, Kent and S184, the best selections from previous orchard trials. Normal grass mixtures were maintained in the alleyways. The clover seed is slow to germinate and establish as full cover. The seed was mixed with short-lived 'nurse' species of tetraploid grass, fescues or mustard, which should die out once the clover is established, to leave a complete legume cover under the tree rows.

The 'nurse' species did little to help legume establishment. germination was slow and weed seedlings a problem in early summer. Shelter from the tetraploid ryegrass aided growth in mid-summer but clover in the best plots managed only 30% cover by the end of the year.

Mulches to attract beneficial insects

Suitable species such as *Phacelia*, trefoils, and various umbellifers, could be integrated along hedge margins, as narrow strips in the grass alleyways and as green mulches in the tree rows.

Examination of refugia placed on the main trunk of trees in the autumn, showed that they were well used by a variety of predators, mainly earwigs, lacewings and capsids. They are simple to construct, inexpensive, cardboard filled plastic drinks bottles, suspended overwinter in the tree canopy.

Slow growing non-competitive ground cover

Small species of willowherb [*Epilobium ciliatum* etc] are shade tolerant, shallow rooting, potentially less competitive plants. Some strains have developed resistance to some herbicides; triazines, paraquat and Challenge, and a pure stand of selected individuals often occurs in herbicide treated areas. This suggests that a willowherb 'green mulch' would be easy to establish and maintain. Seeds from several selected strains have been collected for trial and bulk seed production.