

may even be possible to grow rape as the initial crop, without the aid of a herbicide. The decision whether or not to use a herbicide will depend upon the success of weed control measures employed during the pasture phase.

FIELD POPULATIONS OF DOUBLEGEE SEED - SOME OBSERVATIONS  
ON THE EFFECT OF LEY FARMING

D.J. Gilbey

Department of Agriculture, Western Australia

Doublegee (*Emex australis*) has long been a troublesome annual weed in Western Australia. Field observations indicate that on heavily infested paddocks doublegee plant numbers are often higher in the pasture years of a clover ley rotation than in the cropping phase, which suggests that an accumulation of viable seed in the soil may occur more readily under pasture than in crop. No field measurements have been reported on the amounts of doublegee seed in the soil in relation to the clover ley farming system.

Sampling at Wongan Hills in March 1973 showed that the number of viable doublegee seed in the soil was greater in a paddock that had grown legume pasture for 3 years than one that had been cropped and sprayed the previous year. All of the seed in the pasture paddock was within 50 mm of the soil surface, from where seedlings could readily emerge.

In a more intensive study at four sites in 1974 viable doublegee seed numbers were consistently higher after 1 year of pasture than 1 year of crop. This study showed no consistent relationship between years of clover and the numbers of viable doublegee seed in the soil.

The implication is that selective doublegee control in the first year of pasture after a crop will prevent this increase in viable seed. Although it would be an added cost, benefits may arise from increased pasture production, fewer animal health problems, higher animal production or eradication of the weed.

Although a glasshouse trial showed doublegee reduced the top growth of subterranean clover by 80%, field studies over 3 years in Western Australia have failed to show that doublegee