B 218

Association of the seedbank and emerged weeds in sugarcane in Sri Lanka

Characterization of the soil seedbank and seedling emergence helps to predict vegetation in the field, but few studies have examined their relationship. An experiment was therefore conducted to find out association between the seedbanks and emerged weed seedlings in sugaracane fields in Sri Lanka. Emergence of weed seedlings on the ridges, in the furrows of sugarcane fields and fallow lands was monitored in three plantings, commenced October 1995 January and April 1996. Soil samples taken from 0-4cm depth were germinated in a shade house to estimate pre-planting seedbank at each planting. Chi-square analyses (x^2) were performed to assess the association of species between seedbanks and emerged seedlings in the field.

In the October and January plantings, the all values of x^2 were not significant ≥ 0.05). in April planting, there was a significant (9P$\leq$0.05) relationship in the number of species present between seedbank and fallow land. This may be due to the sedling emergence that occurred in a greater value (1353 seedlings/$m^{2)}$. In the fallow land compared with that of the seedbank (301 seeds/ m^2). In other cases.the values of x^2were not significant (P$\geq$0.05). This implies that there was no association in number of common species between seedbank and emerged seedlings in the fields. Next, the species found in the emerged seedlings were ranked according to their abundance in each site and these values correclated with the rank order of the same in the seedbanks in all three plantings, In six out of nine comparisons the correlation coefficients were not significant(P$\geq$0.05) indicating that there was no close relationship in species abundance between the seedbanks and emerged seedlings. Due to such poor relationship, it is difficult to identify any similarity between the seedbanks and the resultant seedling population. This poor relationshp was apparent irrespective of the cropping situation. Therefore, seedbank assessment alone is not sufficient to predict future mixed wed population in the field.