

**ESTABLISHMENT OF *CYRTOBAGOUS SALVINIAE* SANDS. (*CURCULIONIDAE*:
COLEOPTERA) ON *SALVINIA MOLESTA* MITCHEIL IN KERALA**

Cyrtobagous salviniae Sands is a small weevil of South American origin. Room *et al.* (1981) reported its effectiveness for the control of salvinia in Australia. Studies in the Kerala Agricultural University Centre of the All India Co-ordinated Research Project on Biological Control of Crop Pests and Weeds, Vellanikkara, showed that the weevil is a potentially successful biocontrol agent against salvinia in Kerala.

One unique feature of *C. salviniae* is its slow dispersal habit. They rarely fly. Their movement from one plant to another is also very slow. The slow rate of dispersal is advantageous for establishment of the weevil where inoculative releases are made. This habit also helps the insect to survive under low densities. Both these conditions are helpful in a biological control programme. Under field conditions in Kerala, it is found that even a single fertile female weevil of *C. salviniae* is sufficient for its establishment and multiplication.

Slow dispersal has its limitations too. It hinders the rapid progress of a biocontrol project. In an undisturbed canal at Kumarakom (Kottayam district), the weevil took more than a year to travel a distance of 30 metres. In another canal at Amballoor (Trichur district), the spread of the weevil was hardly to a distance of 20 metres in one year. This is indeed a slow pace of progress and at this rate of spread it may take several years for the weevil to spread in a state like Kerala having several kilometers of *salvinia* infested canals. It was found that this could be overcome by distributing the weevil in as many places as possible. Another method to facilitate quick dispersal of the weevil is to distribute them in navigational canals or in areas having tidal waves or air currents. In the Kuttanad areas where the weed menace is most serious, such favourable conditions exist for the passive dispersal of the weevils. In this locality there are indications of the fast spread of the weevil in Kerala. From one release site at Athirampuzha (Kottayam district) the weevil has spread to a distance of three kilometres in six months time. The fast spread was definitely assisted by the navigation in the area.

In ponds or isolated canals, where such favourable conditions do not exist, for the passive dispersal of the weevil, it was found the coverage could be hastened by release at several points in the pockets of infestation and also by stirring the infested weed mat to facilitate their further natural spread.

സംഗ്രഹം

സിർട്ടോബാഗോസ് സാൽവിനിയെ എന്ന ഇനം പ്രാണികൾ ആഫ്രിക്കൻ പായൽ നശിപ്പിക്കാൻ ഫലപ്രദമാണെന്നു കാണു. ഇന്നുചർന്ന ഒരു പൈൻ വണ്ടിനെ വിട്ടു പായൽ നശീകരണം കാലക്രമേണ സാദൃശ്യമാണെന്ന് പരീക്ഷണങ്ങളിൽനിന്ന് തെളിഞ്ഞു. ഈ

പ്രാണികളുടെ വ്യാപനം പ്രകൃതിയിൽ മന്ദഗതിയിലാണ് നടക്കുന്നത്. എന്നാൽ കാര്യമുള്ള സാഹചര്യങ്ങളിലും വേലിയേറ്റം ഇറക്കം ഇവ അനുഭവപ്പെടുന്നയിടങ്ങളിലും ജലഗതാഗതമുള്ള തോടുകളിലും മറ്റും, ഈ പ്രാണികളുടെ നീക്കം സാമാന്യം തപരിതഗതിയിൽ നടക്കുമെന്നു കാണുകയുണ്ടായി.

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Reference

Room, P. M., Harley, K. L. S., Forno, I. W. and Sands D. P. A., 1981. Successful biological control of the floating weed salvinia. *Nature* 294 (5836):78-80.

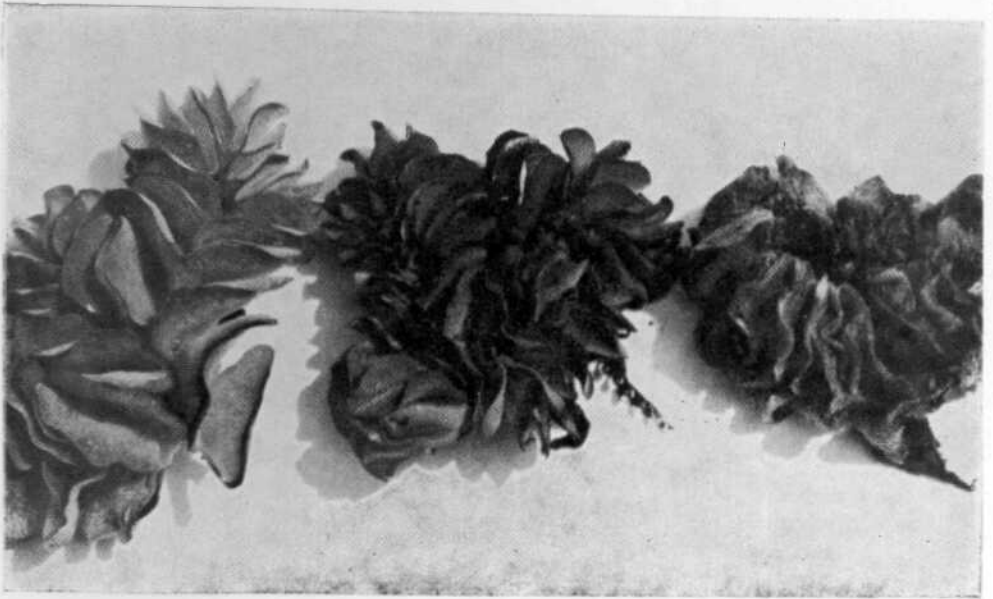


Fig. 1
Browning of salvinia due to *Cyrtobagous* weevil infestation

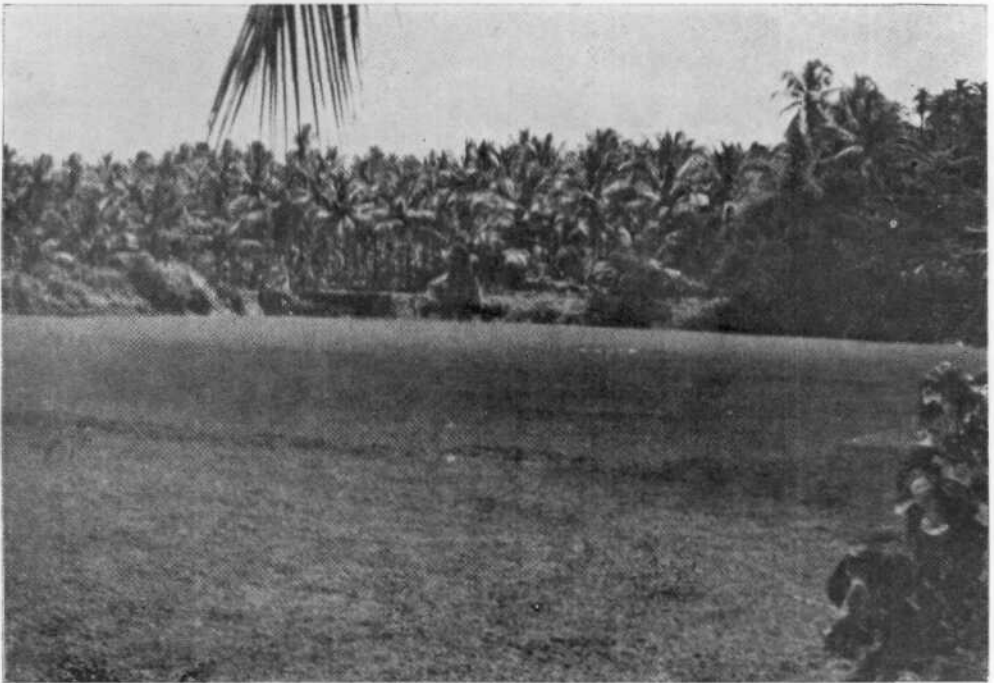


Fig. 2
Progressive drying of salvinia due to *Cyrtobagous* weevil infestation