

ALIB AND ORIGINS

In spite of preparative and structural studies of the organotin co-ordination compounds reported in considerable detail, no extensive study of their biocidal properties have been published so far. It is believed that the co-ordination of ligands to tin would generally reduce its fungitoxic properties, but there are certain reports on the contrary (76, 80, 81). The fungitoxic effect of the organotin co-ordination compounds possibly will have some dependence on the nature of co-ordinating ligands, but so far, lack of sufficient published data prevent us to draw a definite conclusion on the effect of co-ordination on the tin with respect to their antifungal properties. Moreover, very little work has been done so far in India about the suitability of organotin pesticides under local conditions. Hence, we decided to undertake the antifungal studies of some organotin co-ordination compounds against some important plant pathogenic and wood rotting fungi under in vitro condition. On the basis of data obtained from in vitro studies, we intended to study the effect of these compounds to control of brown leaf spot disease of rice and wood deterioration. Along with the antifungal properties pertaining control of plant pathogenic fungi, it was also intended to study the phytotoxic nature of these organotin co-ordination compounds.

The test compounds employed during the investigation were triorganotin and diorganotin complexes with ligands like dithiurone, diphenyl carbamate and oxalyl bis-*o*-*p*-tolyl hydroxamic acid. Compound co-ordinating with the ligand oxalyl bis-*o*-*p*-tolyl hydroxamic acid is such one where two triorganotin moieties are being co-ordinated by a single ligand molecule. It was expected that such compound should exhibit better fungitoxic properties than the other organotin co-ordination compounds where one tri organotin moiety is co-ordinated by a single ligand molecule. The interest of such organotin co-ordination compounds lies in the fact, that co-ordination compounds have considerably lower tin content than commercially important present organotin fungicides.

Literature surveys indicate that for controlling fungal diseases of plants, organotin fungicides may be applicable for their high effectiveness at a much lower concentration than the previously used copper fungicides^(82,83). Moreover, the biodegradation pattern is much more favourable than copper fungicides from the point of environmental considerations. Therefore, it was believed that the study of fungicidal properties of organotin co-ordination compounds may be of considerable interest from the point of agricultural applications, particularly under Indian field conditions where the demand of plant protecting agents are gradually increasing.