

Active weedicide compounds from the fungus, *Alternaria*

Two weeds, *Lantana camara* Linn. and *Parthenium hysterophorus* Linn. though possess many useful properties have been targeted by researchers for eradication especially when they affect cash crops. Use of chemical weedicides is not advisable due to their harmful effects on other plants. So, Sanjay Saxena, a biochemist at Thapar Centre for Industrial Research and



Lantana camara Linn.

Development in Patiala studied and found out an active compound from fungus, *Alternaria alternata* (Fr.) Keissler to control these two weeds. Saxena told *News India* 'The organism was producing toxic compounds when grown on a suitable liquid medium under controlled conditions and the three low molecular-weight organic compounds, none of which was previously reported, were



Parthenium hysterophorus Linn.

characterised'. The compounds belong to the lipid family. The purified compounds were found to be active against the weeds at doses of 100 parts per million. The *in vivo* assay on plants 2 to 4 weeks old showed death at 160 hours after the start of treatment. Additionally these compounds are not toxic to vegetables or other crops. The effectiveness of compounds gets enhanced when they are combined with spores of the fungus. Thus in near future these compounds could replace hazardous chemicals (*News India*, August 2001, 4).

Lichens

A potential source of herbicide

Lichens - An unlikely source of new herbicides has been reported by Hank Becker. He says that although natural lichen products have been traditionally overlooked, the ARS scientists and University of Mississippi natural products chemist Dhammika Nanayakkara discovered that one common lichen metabolite-usnic acid inhibits carotenoid synthesis. For the first time it has been found that this acid is toxic to 'plants.' It works by bleaching the first leaves a plant forms, causing a decrease of both chlorophyll and carotenoids in treated plants. Usnic acid does this by preventing photosynthesis through a key enzyme involved in pigment biosynthesis'. So this property could be used to control the growth of weeds and it is 10 times more effective than other compounds. This project is likely to open an area of lichens utility in developing eco-friendly herbicides [Becker, *Agric Res*, 2001, 49(1), 10].