

47 G, Ballygunge Terrace, T. ANANDA RAO.
Calcutta-19.

G. C. Bose Biological C. P. BHUPAL.
Research Unit
(Bangabasi College),
Calcutta-9, April 20, 1971.

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RESPONSE OF GREENING PATHOGEN OF CITRUS TO CERTAIN TETRACYCLINE ANTIBIOTICS

GREENING disease of citrus has been found to be of very common occurrence in India⁷⁻⁹. Recently, mycoplasma like bodies have been found to be present in the phloem cells of greening affected sweet orange seedlings indicating that they may be the causal agent⁵. Mycoplasma like bodies associated with citrus greening disease have been isolated and cultured on artificial medium in this laboratory². In September 1970, experiments were conducted at the Indian Agricultural Research Institute to test the effect of three tetracycline antibiotics, aureomycin (chlortetracycline hydrochloride), achromycin (tetracycline hydrochloride) and ledermycin (dimethyl chlortetracycline hydrochloride), Cyanamid India Ltd., products on the greening affected citrus plants. The results of these tests are presented in this paper.

Sixteen two-year-old-potted seedlings of sweet orange (*Citrus sinensis* Osbeck) infected with greening disease by grafting were used for the experiment. Sets of four plants were sprayed with each of the three antibiotics at 500 ppm till dripping stage and the fourth set of four plants was sprayed with water and served as control. Sprayings were repeated at weekly intervals for ten weeks.

After twelve weeks it was observed that three out of four plants under each of the treatments under achromycin and ledermycin

spray showed recovery from greening symptoms whereas no effect was observed on plants sprayed with aureomycin and those sprayed with water. The recovery was mostly observed in the new growth which became completely green and devoid of stunting which is characteristic of severely greening affected plants. None of the control plants showed any changes in foliage and remained stunted with chlorotic leaves. The plants have remained in this condition during the course of observation for six months from the start of the experiment.

The diseases ascribed to mycoplasma have been shown in the past to respond to tetracycline compounds^{1-4,10}. Recently, the stubborn disease of citrus in the U.S.A. which is related to greening disease has also been suggested to be due to mycoplasma and the diseased plants have shown suppression of symptoms by tetracycline antibiotics³. Achromycin has also been found to have suppressive effect on symptoms of citrus greening disease in the Philippines⁶. Thus the tetracycline compounds offer a new field for investigations against the yellows type of virus diseases which have been attributed to mycoplasma like bodies.

Grateful thanks are due to the U.S. Department of Agriculture for providing funds under a PL 489 project on Epiphytology of greening disease of citrus in India for carrying out these investigations.

Division of Mycology T. K. NARIANI.
and Plant Pathology, S. P. RAYCHAUDHURI,
Indian Agricultural S. M. VISWANATH.
Research Institute,
New Delhi-12, May 5, 1971.

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