

## EFFECT OF HOMŌEOPATHIC DRUGS ON THE GROWTH OF TWO PLANT PATHOGENS

V. K. DUA\* & D. C. ATRI,\* Sagar

Several methods including storage at low temperature, use of fungicides, antibiotics and growth regulators have been suggested by various workers to control post harvest decay of fruits and vegetables (Dharam Vir *et al.* 1967; Thakur and Chenulu, 1970; Chaurasia *et al.* 1973; Gupta *et al.* 1973; Thakur *et al.* 1974). Reports on a few recent observations indicate that homoeopathic drugs retard the multiplication of viruses within the host tissues (Verma *et al.* 1969; Khurana, 1971) and suppress spore germination and fungal growth of different fungi (Khanna and Chandra, 1976, 1977, 1978). Thus with a view of examining the possibility of control of plant diseases by homoeopathic drugs the present study was made, in which effects of five homoeopathic drugs, viz. Arsenicum album, Blatta orientalis, Cina, Lycopodium clavatum and Thuja occidentalis† on two common fungal pathogens, viz. *Alternaria solani* and *Botryodiplodia theobromae* were investigated.

### MATERIALS AND METHODS

*A. solani* and *B. theobromae* were isolated from diseased fruits of tomato and apple respectively and stored in PDA slants. Czapek's Dox broth was used as basal medium, 25 ml of which was poured into 150 ml flasks. After sterilization flasks were provided with six different potencies, viz. 1, 4, 7, 13, 31 and 201 of each test drug. The potencies of the drugs were prepared in distilled water in centesimal scale, for this  $\phi$ , 3, 6, 12, 30 and 200 potencies of the drugs were taken and each was raised to next higher potency by adding 99 ml of distilled water in 1 ml of drug and giving proper succussions to it as described in M. Bhattacharyya and Co's *Homoeopathic Pharmacopoeia* (1980).\*\* Before use the drugs were sterilized by filtration through Jena sintered glass filter G 5m.

After adding 5 ml of drug in each flask the contents were shaken and mixed thoroughly. The flasks were then inoculated with 4 mm discs of inoculum cut from the margins of a freshly grown young colony of *A. solani* and *B. theobromae* and incubated at  $28 \pm 1^\circ\text{C}$ . for 10 days and 4 days res-

\* Department of Botany, University of Saugar, Saugar 470 003.

† The reasons for selection of these five drugs for experiment should have been discussed since all five have some variable positive results.—Editor.

\*\* The authors should have referred to the Homoeopathic Pharmacopoeia of India, a standard reference book related to homoeopathic pharmacy, published by Government of India.—Editor.

pectively. Flasks containing 25 ml broth and 5 ml distilled water served as controls.

After incubation period mycelial mats were harvested and washed with distilled water and then oven dried at 60°C. Dry mycelial weight was determined and per cent inhibition over control was calculated.

#### RESULTS AND DISCUSSION

An appraisal of the data (Tables 1 and 2) revealed that all the five drugs were found to be antifungal against *A. solani* and *B. theobromae* though the fungitoxic effects were quite variable in both the cases. However, antifungal activity shown by *Thuja occidentalis*, *Blatta orientalis* and *Arsenicum album* appeared to be more remarkable than others in case of *A. solani*. In case of *B. theobromae* *Thuja occidentalis* and *Blatta orientalis* respectively proved more effective than others. Comparatively *A. solani* was found to be more sensitive than *B. theobromae* to almost all the drugs. Surprisingly there appeared to be no positive correlation between the potencies and their relative inhibitory effects in most of the cases. Similarly Khanna and Chandra (1976, 1977) also failed to observe any correlation in the inhibition of spore germinations at various potencies of homoeopathic drugs. However, Verma *et al.* (1969) observed that higher potencies of the drugs were ineffective while the lower potencies of the drugs were more effective for causing the inhibition of Tobacco Mosaic Virus (TMV).

#### ACKNOWLEDGEMENTS

The authors are grateful to Prof. G. P. Mishra, Head, Department of Botany, University of Saugar, Saugar for providing laboratory facilities. Thanks are also due to Dr. K. M. Vyas for helpful suggestions.

#### REFERENCES

- Chaurasia, S. C., K. M. Vyas and N. K. Soni: 'Efficacy of Certain Antibiotics Against *Phytophthora parasitica* var. *piperina* Causing Leaf rot of 'Pan', *Hind. Antibiot. Bull.* (1973) 16-1 Aug.
- Dharam Vir, S. P. Raychaudhuri and M. J. Thirumalachar: 'Aureofungin as Fruit Dip and Wrap Treatment for the Control of Diplodia Rot of Mango and Alternaria Rot of Tomato Fruit During Transit', *Indian Phytopath.* (1967) 20: 301-303.
- Gupta, J. P., M. S. Chatrath and A. M. Khan: 'Chemical Control of Fruit Rot of Guava Caused by *Collectotrichum gloeosporioides*', *Indian Phytopath.* (1973) 26: 650-653.
- Khanna K. K. and S. Chandra: 'Effect of Some Homoeopathic Drugs on The Spore Germination of Four Isolates of *Alternaria alternata*', *Indian Phytopath.* (1976) 29: 195-197.
- Khanna K. K. and S. Chandra: 'Control of Guava Fruit Rot Caused by *Pestalotia psidii* with Homoeopathic Drugs, *Plant Dis. Repr.*, (1977) 61: 362-366.
- Khanna K. K. and S. Chandra: 'A Homoeopathic Drug Controls Mango Fruit Rot Caused by *Pestalotia mangiferae* Henn', *Experientia*, (1978): 34: 1167-1168.
- Khurana. S. M. Paul: 'Effect of Homoeopathic Drugs on Plant Viruses, *Planta Medica* (1971) 20: 142-146.

(Continued on page 414)

## HOMOEOPATHIC NEWS

### HAHNEMANN DAY OBSERVED

The Homoeopathic Medical Association of India, Meerut unit observed Hahnemann's birthday by a function held on 24th April 1983 at the Western U.P. Chamber of Commerce & Industries. Mr. Dayanand Gupta, Chairman, New Bharat Paper Products, Modinagar presided over the function. Mrs. Mohscena Kidwai, Union State Minister for Health was the Chief guest.

Mrs. Kidwai told about Central Government's interest in the development and progress of Homoeopathy. She assured that more funds will be available for development of Homoeopathy in future.

(2)

The Homoeopathic Medical Association of India, Koraput district Branch celebrated Hahnemann's birthday and its Second Annual Conference on 24th April 1983 at Jeypore. Sri B. C. Patnaik, I.A.S., Chief Administrator of Dandakaranya Project inaugurated the function. Sri H. N. Patra, Station Director; All India Radio, Jeypore unveiled the portrait of Hahnemann. Sri J. S. Khurana, I.A.S., Collector of Koraput district was Chairman of Reception Committee.

About 200 delegates attended the function.

(3)

Kent Homoeo. Association, Cuddapah (Andhra Pradesh) celebrated 228th birthday of Hahnemann. The function was attended by knowledgeable persons and intellectuals

### EFFECT OF HOMOEOPATHIC DRUGS ON THE GROWTH OF TWO PLANT PATHOGENS

(Continued from page 412)

- M. Bhattacharyya & Co's *Homoeopathic Pharmacopoeia*, Calcutta: M. Bhattacharyya & Co. Pvt. Ltd. (1980).
- Thakur, D. P. and V. V. Chenulu: 'Chemical Control of Soft Rot of Apple And Mango Fruits Caused by *Rhizopus arrhizus*', *Indian Phytopath* (1970) 23: 58-61.
- Thakur D. P., V. V. Chenulu, Z. S. Kanwar *et al*: 'Growth Regulators in Control of Post Harvest Fungal Diseases of Fruits and Vegetables, *Indian Phytopath* (1974) 27: 532-536.
- Verma, H. N., G. S. Verma, V. K. Verma, Ram Krishna *et al*: 'Homoeopathic and Pharmacopoeial Drugs as Inhibitors of Tobacco Mosaic Virus, *Indian Phytopath*, (1969, 22: 188-193.