

HOMOEOPATHIC DRUGS AS INHIBITORS OF TOBACCO MOSAIC VIRUS

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Control of plant virus diseases by homoeopathic drugs has been tried by a few workers in the past (Verma *et al.*, 1969; Khurana, 1971 and Abidi *et al.*, 1977). In view of the encouraging results obtained against tobacco mosaic and papaya mosaic viruses, a few more drugs were tried in the present investigation.

MATERIALS AND METHODS

Arsenic, Thyroidinum and Uranium nitricum of 3x potency were raised to 7x potency and converted into liquid base using distilled water. Sulphur 100, Carcinocin 1000, Morgan 30, Dolichos 6, X-ray 30, Influenzinum 200 and Vaccininum 30 were raised to next higher potency by adding 99 ml of distilled water in 1 ml of the drug.

Culture of TMV was maintained on *Nicotiana tabacum* var. White Burley. The experiments were carried out on *N. glutinosa*, a hypersensitive host of TMV. Sulphur, Carcinocin, Morgan, Dolichos, Thyroidinum, Arsenic and Uranium nitricum were sprayed on the plants after 15 minutes and 24 hrs. of virus inoculation while Influenzinum, X-ray and Vaccininum were sprayed twice (48 hrs. and 24 hrs.) before virus inoculation.

Inoculum of TMV was prepared by macerating young infected leaf tissue in a pestle and mortar with equal amount of 0.01 M, pH 7 phosphate buffer. The slurry was centrifuged at 5000 rpm for 17 minutes and the supernatant thus obtained was used as inoculum. Inoculations were made by rubbing on leaves dusted with carborundum powder. Lesions were counted on fourth day of virus inoculation and per cent inhibition was calculated by comparing with check plants.

RESULTS

Influenzinum, Vaccininum and X-ray when sprayed before virus inoculation on *N. glutinosa* plants did not exert any kind of protection. Instead, the number of lesions were enhanced in treated plants as compared to controls.

Out of 7 drugs tried from therapeutical point of view, Arsenic, Thyroidinum and Uranium nitricum were found to be more effective in decreasing the number of local lesions as compared to Morgan, Sprays of Dolichos,

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Sulphur, and Carcinocin, however, had no marked effect in reducing the number of local lesions.

TABLE 1

Effect of post-inoculation sprays of some drugs on number of local lesions produced on *N. glutinosa* by tobacco mosaic virus.

Drugs	Potency	Per cent reduction in number of lesions over control
Thyroidinum	7x	45
Arsenic	7x	44
Morgan	31	21
Uranium nitricum	7x	46
Dolichos	7	Nil
Sulphur	102	Nil
Carcinocin	1001	Nil

DISCUSSION

Search for inhibitors of plant virus multiplication has not been very successful in spite of continued efforts during the past several decades. Our investigations as well as previous records have yielded enough encouraging results to explore the use of homoeopathic drugs for prevention and control of plant virus diseases.

It is obvious that systematic approach towards control of viral maladies of the plants through homoeopathic drugs might yield some reliable and concrete data. It would be worth while to work on two lines: (i) to prepare drugs from infected plant tissue in accordance with the theory of homoeopathic nosodes and observing their prophylactic effects against plant viruses, (ii) to screen various available drugs on healthy plants for development of virus like symptoms (proving) with a view to select the drugs for controlling different viral diseases. Such approach in future might prove a headway towards control of plant viruses which otherwise are difficult to manage.

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Editorial comment: (1) The research suffers at the most fundamental level of homoeopathic philosophy in that, all efforts are concentrated in find-

ing a specific drug for the virus infection. Individualization is the fundamental concept of Homoeopathy, for without that, it is not possible to establish a similarity between the drug and the disease. Where the law of similars is not operative, the therapy deserves to be called by any other name other than Homoeopathy.

(2) Unless there is an error in reporting, the method of potentization mentioned in the work is erroneous in that, in raising a potency, it is not merely a question of diluting the drug in a certain proportion that matters but also, the physical process of succussion or trituration involved in it.

(3) The research began with the object of finding a certain group of drugs being investigated for their inhibiting quality of the growth of TMV. The natural conclusion that could be expected was a clear statement in respect of the drugs, which one of them was most efficacious, which one was partially effective and which did not have any action at all. Thus far so good. But the authors have entered into an unnecessary explanation exposing themselves to the commission of many errors unwarrantedly. How could the prophylactic effects of nosodes be determined without the knowledge of their pathogenetic effects, which in this case, on the plants that were examined? What is the basis of erecting a totality? Can objective signs alone determine the totality? These aspects the researchers need to examine before they set about the job of further research of the above type.
