SENSITIVITY OF KERATINOPHILIC FUNGI TO SOME HOMOEOPATHIC MEDICINES

DR. MRS. B. GEETHA SINGH, Lucknow

ABSTRACT: Four homoeopathic medicines (Bacillinum, Fagopyrum, Petroleum and *Sepia*) were evaluated *in vitro* for their inhibitory effect on four keratinophilic fungi in relation to radial growth and mycelial weight. Fagopyrum 1000 caused 95% inhibition in the radial growth of *Nannizia incurvate strain* (+) Stockdale, while 85% & 80% growth inhibition was recorded by Bacillinum 1000 & Sepia 1000 respectively. These drugs in 1000 potency were further tested against the test fungi in relation to mycelial weight. Fagopyrum could cause 98% growth inhibition against *N. incurvata* strain (+) whereas Bacillinum and Sepia caused 95% & 90% inhibition respectively on this fungus. Other fungi in the order of their susceptibility to these drugs were: *Botyatrichum keratinophilum* Kushwaha & Agrawal —> *Malbranchea aurantiaca* Sigler & Carmichael —> *Nannizia incurvata* strain (—) Stockdale.

INTRODUCTION

It is a well-known fact that Homoeopathy is one of the most natural and nearly perfected systems for treatment of ailments of various physiologic and pathogenic origins. Khurana[3] tried homoeopathic medicines for the first time to explore their efficacy against plant viruses. Since then, several workers[2,5,6,7] used these medicines to inhibit the growth of viral and fungal pathogens of plants. The present study[1] was undertaken to try four homoeopathic medicines (Bacillinum, Fagopyrum, Petroleum and Sepia) which were effective in checking the growth of certain leaf spot pathogens of ornamental plants[6] against four keratinophilic fungi, i.e. *Nannizia incurvata* strain (+) & strain (—) Stockdale, *Malbranchea aurantiaca* Sigler and Carmichael and *Botryotrichum keratinophilum* Kushwaha & Agrawal, in relation to radial growth and mycelial weight.

MATERIALS AND METHODS

(1) *Effect of drugs on radial growth*: The above mentioned homoeopathic medicines were taken in three different potencies, prepared in sterile double distilled water in decimal and centesimal scales and screened for their effect on the radial growth of fungi by 'poisoned food technique.'[4] Five ml of each potency was mixed in 30 ml of autoclaved Sabouraud's dextrose medium. Just before its gelling, the medium was poured into petri plates and then inoculated in the centre with an inoculum disc of 6 mm diameter obtained from 8 days' old colonies of the test fungi. The plates were incubated at 28°C for 12 days and controls were also run separately without any treatment for each organism. The diameter of fungal colony under each treatment was measured and per cent inhibition in each case was calculated with the help of controls (Table I).

(2) *Effect of medicines on dry mycelial weight*: The potencies of medi-

cines which showed inhibitory effect on the radial growth of test fungi were further tried for their efficacy in relation to mycelial weight. For this purpose 5ml of the test medicine was taken in sterilized 150ml Erlenmeyer flasks containing 25ml of Sabouraud's dextrose broth. The flasks were then inoculated with inoculum discs of 6mm diameter obtained from 8 days' old test fungus and incubated for 12 days at 28°C. After the said period, the mycelial mats of the flasks were harvested through preweighed filter papers and were dried at 80°C for 24 hrs. The dry mycelial weights of these fungi were compared to the control in order to calculate the percentage inhibition of fungal growth in relation to mycelial weight (Table II).

TABLE—I

EFFECT OF HOMOEOPATHIC MEDICINES ON THE RADIAL GROWTH OF KERATINOPHILIC FUNGI

Medicines	Potency	Percentage of inhibition in radial growth*			
		A	B	C	D
Bacillinum	30	40	10	50	40
	200	45	15	65	45
	1000	85	65	70	75
Fagopyrum	6	50	15	12	45
	200	65	25	20	55
	1000	95	60	65	88
Petroleum	6	25	15	—	10
	200	45	20	25	15
	1000	50	25	50	20
Sepia	30	25	10	50	40
	200	35	15	55	45
	1000	80	50	60	65

* Each datum shown in the table is an average of two independent determinations.

A—*Nannizia incurvata* strain (+) B—*Nannizia incurvata* strain (—)
C—*Malbranchea aurantiaca* D—*Botryotrichum keratinophilum*

TABLE—II

EFFECT OF HOMOEOPATHIC MEDICINES ON DRY MYCELIAL WEIGHT

Medicines	Potency	Percentage of inhibition in mycelial weight*			
		A	B	C	D
Bacillinum	1000	95	80	85	90
Fagopyrum	1000	98	90	92	95
Sepia	1000	90	80	85	85

* Each datum shown in the table is an average of two indepeudent determinations.

A—*Nannizzia incurvata* strain (+) B—*Nannizzia incurvata* strain (—)
C—*Malbranchea aurantiaca* D—*Botryotrichum keratinophilum*

RESULTS AND DISCUSSION

A perusal of data (Table I) reveals that Fagopyrum 1000 could cause 95% inhibition in case of *N. incurvata* strain (+), whereas Bacillinum and Sepia caused 85% and 80% inhibition respectively. Other fungi in the order of their susceptibility were *B. keratinophilum* —> *M. aurantiaca* —> *N. incurvata* strain (−). The medicine Petroleum was found to be insignificant in its effect on these test organisms even in higher potency.

Bacillinum, Fagopyrum and Sepia were further tested against the test fungi in 1000 potency in relation to mycelial weight (Table II), and it was found that Fagopyrum 1000 could cause 98% inhibition in case of *N. incurvata* strain (+), whereas in the same potency Bacillinum and Sepia caused 95% and 90% inhibition of this fungus respectively. The order of susceptibility of other test fungi was in the same pattern as above.

Homoeopathic medicines are in use for curing skin infeetions which in many instances, proved to be very effective. However, a thorough and systematic study of the mechanism involved is very necessary as these medicines are more promising and safe as compared to antibiotics and other drugs. The present observation also reveals that the efficacy of these medicines increased with the increase in their potency. Hence, the correct usage of these medicines in appropriate potencies, for the well-diagnosed diseases of the superficial parts of man, caused particularly by dermatophytes, will be very much effective.

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