

TECHNICAL PAPERS

Effect of Crude Polyporin on Seed Germination and Root Growth: A Preliminary Study

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Germination experiments with gram (*Cicer arietinum* L.) seeds soaked for 24 hrs in water containing 3 cc of crude filtrate ('Polyporin,' 1) showed distinct retardation of germination when compared with the control soaked in water; even the seedlings which ultimately developed were fewer in number and shorter in length than those of the control.

Rings were cut from the outer cortex of branches of guava (*Psidium guyava* L.) trees in the College Garden, and the exposed surfaces were kept smeared with (1) crude Polyporin for 24 and 48 hrs, respectively, being



FIG. 1

finally wrapped over with moist cotton wool. Neighboring branches similarly treated were covered with cotton wool soaked in (2) distilled water and in (3) 4% glucose, pea-decoction, and salts (the blank medium commonly used in our 'Polyporin' experiments). In the case of (1), Polyporin was washed out with distilled water after 24 and 48 hrs, respectively, and the regions were covered with moist cotton wool. All the treated parts of the branches were watered daily with distilled water. In the course of 26 days, 2 young roots protruded from the branch treated with Polyporin for 24 hrs, and 6 roots from the region treated with Polyporin for 48 hrs. The roots were quite strong, healthy, and fresh (Fig. 1). Not a single root-formation was observed in the cases of (2) and (3). The experiments are being repeated with *Mangifera indica* L., *Eugenia Jambos* L. trees, and *Areca oleracea* in our College Garden.

According to Ribeiro (3), penicillin was found to inhibit germination of seeds after a 24-hr treatment with

the antibiotic. With crude penicillin Smith (5) has obtained similar results. None of the crystalline penicillins tested by Smith retarded germination appreciably. From plant tissue-culture experiments Ropp (4) held that commercial penicillin causes proliferation of cambial tissue, followed by an abundant production of roots. Highly purified penicillin failed to damage the growing sarcomatous cells in mice experiments carried out by Lewis (2), while the yellow penicillin used in proper dosage damaged the growing sarcomatous cells without injuring the normal cells.

These results show that crude Polyporin contains substances which cause partial inhibition of seed germination and, like indole-3-acetic acid and indole-butyric acid, promote root growth.

Addendum: Since writing the above, we have succeeded in obtaining root development from *Eugenia Jambos* stems treated with Polyporin for 48 hrs.

References

1. BOSE, S. R. *Nature, Lond.*, 1946, 158, 292.
2. LEWIS, M. R. *Science*, 1944, 100, 314.
3. RIBEIRO, D. F. *Science*, 1946, 104, 18.
4. ROPP, R. S. DE. *Nature, Lond.*, 1946, 158, 555.
5. SMITH, W. J. *Science*, 1946, 104, 411.

Preflooding Treatments With DDT for Mosquito Control¹

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The residual toxicity of DDT has made possible the use of preflooding treatments for the control of mosquito larvae. This method was first used with favorable results by Wisecup and Deonier in 1944 (3) on small breeding places of species of *Psorophora* in Florida. Shortly afterward, Wisecup, *et al.* (2) found that preflooding treatments with DDT sprays applied by airplane effectively controlled mosquitoes in Arkansas rice fields. In 1946 Horsfall (1) employed an adaptation of this method by adding DDT to fertilizer to control *Psorophora confinnis* (L.-Arr.) in rice fields. Wisecup, *et al.* (4), however, reported poor control of salt-marsh mosquitoes, *Aedes taeniorhynchus* (Wied.) and *A. sollicitans* (Walk.), with relatively low dosages of DDT sprays (emulsions and solutions) applied by airplane. Recently Yates and Gjullin

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