

### ON A MORPHOLOGICALLY INTERESTING *OSCILLATORIA* Sp.

IN the course of investigations on the algal flora of crop-fields of Uttar Pradesh, an *Oscillatoria* sp. was isolated from enrichment cultures of soil from a potato (*Solanum tuberosum*) field near Lucknow, which shows a very interesting morphological feature hitherto unrecorded in the genus. This is also the first report of any algal taxon from soils of a potato field. The present taxon is briefly described as follows:



FIGS. 1-3. *Oscillatoria* sp. showing the serrate, nature of the margins.

Trichomes single or in groups, intermingled with other algae, olive to blue green, straight, ends slightly bent and attenuated; cells 12.0-14.0  $\mu$ m broad, 4.0-6.0  $\mu$ m long; granulated, 2-4 granules in each cell; septa projecting over the general plane of the cell wall in the shape of an annular rim, producing a serrate appearance; end-cell truncated, slightly bent, capitate with outer membrane thickened.

The present *Oscillatoria* sp. can be compared in its cell dimensions with a number of species of the genus particularly with *O. limosa* Ag. ex. Gom. and *O. sancta* (Kütz.) Gom.<sup>1-4</sup> but the present alga possesses an entirely different and remarkable feature in the presence of annulated septa, the margins of which protrude out slightly beyond the longitudinal sides of the filament. These project out, giving the appearance of a more or less serrate margin (Figs. 1-3), whereas in other cases known so far in the genus, the trichomes may be constricted or unconstricted at the septa. The present plant is not assigned any specific taxonomic rank at present and only the unusual morphological observation is being recorded. Further culture work may, perhaps, elucidate the systematic status of the alga.

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### INHIBITION POTENTIAL OF AUREOFUNGIN AGAINST *CEPHALOSPORIUM SACCHARI* AN INCITANT OF SUGARCANE WILT.

*Cephalosporium sacchari* Butl. is an important pathogen causing sugarcane wilt. Aureofungin is a broad spectrum systemic antibiotic. It is found effective against a wide variety of fungi (Hindustan Antibiotics, Ltd., Leaflet). Aureofungin has been found useful in controlling several diseases under field conditions but no trial on sugarcane wilt has so far been made. The present communication is aimed to investigate the *in vitro* effect of Aureofungin on spore germination and mycelial growth of the pathogen.

Spore suspension was made in distilled water from a 10 days old culture of *C. sacchari* and centrifuged to render it free from mycelium and nutrients. For studying spore germination of the fungus, the spores were taken in a hanging drop culture using liquid Richards's medium. Aureofungin was added to liquid medium to give concentrations of 1, 5, 10, 20, 30, 50 ppm of Aureofungin keeping the control without the antibiotic. The hanging drop cultures, thus prepared, were placed in a moist chamber and incubated at 30° C for 48 hours. The percentage germination and the length of germ tubes were determined for each antibiotic concentration.

The *in vitro* effect of Aureofungin on mycelial growth of the fungus was made by "Poisoned food technique"<sup>1</sup>. Aureofungin was added to Richards's agar medium to give final concentrations of 5, 10, 20, 50, 100 ppm respectively with proper controls. Different concentrations of the medium were plated, inoculated with the disc of mycelium (5 mm diam.) punched out from vigorously growing cultures of the fungus and incubated at 30° C for 12 days. After incubation the growth was measured.



Results show that Aureofungin is inhibitory to spore germination of the pathogen at the minimal concentration used. The percentage germination of spores was 32 and the length of the germ tube was  $53\mu$  at 1 ppm which further reduced with increase in concentration of the antibiotic. At 10 ppm and over germination percentage was nil.

The mycelial growth at 5 ppm of the antibiotic was 9 mm as compared to 64 mm in the control. The growth was completely checked at over 20 ppm.

The above findings confirm that Aureofungin has a potential utility against *C. sacchari* by virtue of its inhibitory effect on spore germination and growth of the pathogen even at the minimum concentration, and the same can perhaps be useful in controlling the disease under field conditions.

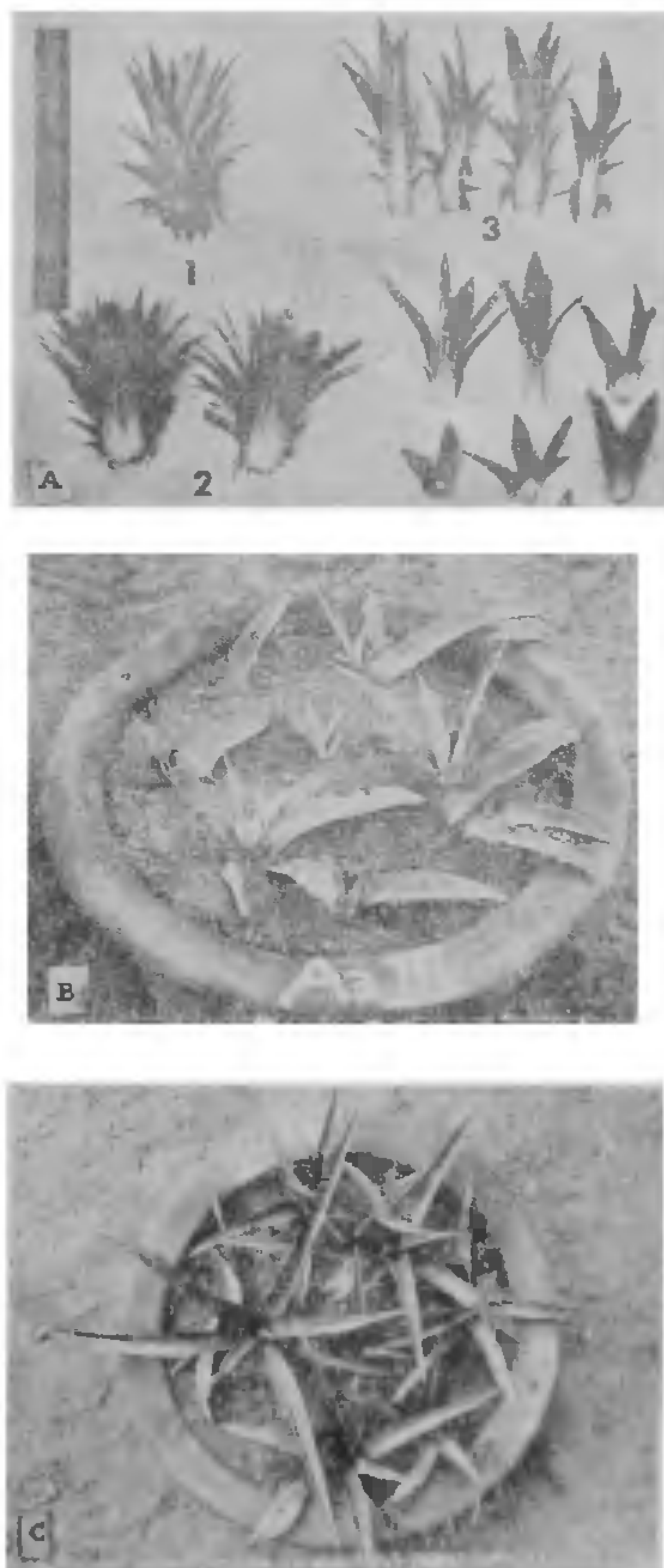
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#### VEGETATIVE MULTIPLICATION BY LEAF CUTTINGS OF CROWNS IN PINEAPPLE (*ANANAS COMOSUS* L.)

SHORTAGE of planting material is often felt in the case of pineapple. Reports of successful propagation using stumps, crowns, etc., are available. However, these methods are far from satisfactory for practical applications<sup>1-2-3</sup>. Hence efforts were made to use leaf cuttings (leaf with an axillary bud) from fruit crown of *Ananas comosus* L. Each leaf in the crown has a bud in its axil. Usually, crowns of fruits are discarded in India as they take more time for fruiting. Two experiments were laid, one in dry season (16th March 1976) and another in wet season (24th July 1976). Ten to sixteen longitudinal leaf cuttings were obtained from each crown. The crown was cut into 4 equal parts and then from each quarter piece, leaf cuttings were made (Fig. A). The first experiment in dry season was conducted in shade and open. Success upto 70% was obtained under shade in untreated leaf cuttings. Treatments with various fungicides like Bavistin, TBZ (thiobendazole), etc., did not increase the percentage success over untreated control. The second experiment in the monsoon season was done only in the open. The fungicides were applied just before planting by dipping the leaf cuttings for about five minutes in

each fungicidal suspension. Success upto 100% was obtained with Dithane Z-78 (0.2%) compared to 62% in the case of untreated control. (Fig. B leaf cuttings, 3 months after planting and Fig. C leaf cuttings, 6 months after planting). This method can be used for solving the problem of shortage of plant material. Detailed results of the experiment will be reported elsewhere.



FIGS. A-C. Fig. A. Crown from fruit of pineapple (1), crown cut longitudinally into two pieces (2), each half piece further cut to make four pieces (3) and each quarter piece was cut to make leaf cuttings so that each cutting has 2-3 leaves. Fig. B. Success with propagation from leaf cuttings, three months after planting. Note small plants emerging from each leaf cutting. Fig. C. Growth of plants emerged from leaf cuttings, six months after planting.