



Figure 1. Restriction profile of DNA of *Oscillatoria* sp. MKU 178 digested with *Dpn*I (lane 3), *Mbo*I (lane 5) and *Sau*3A (lane 7). Lanes 2, 4 and 6 are the corresponding untreated controls, lane 1 λ DNA \times HindIII molecular weight marker. (Equal volumes of the DNA was distributed into three eppendorf tubes. The DNA in the three tubes was suspended in *Dpn*I, *Mbo*I and *Sau*3A buffers respectively. A 5 μ l aliquot from each suspension was treated with one microtitre of the corresponding enzyme. A 5 μ l aliquot of each suspension without the enzyme was kept as control.)

methylated in both the strands, whereas *Mbo*I cuts only if the adenine is totally unmodified. *Sau*3A cuts irrespective of adenine modification, but in the absence of cytidine modification. From our results it is clear that DNA of this organism lacks modification of both adenine and cytidine residues in the GATC sequences. Reports regarding the unusual resistance of cyanobacterial DNA to restriction endonucleases have proposed the involvement of a deoxy-adenosine methylase (*Dam*) enzyme (*Dam* methylates the adenine in a GATC sequence) in DNA modification^{6,7}. The results obtained in the present study prompts us to postulate that a *dam*-like system of modification is absent in this cyanobacterium, *Oscillatoria* sp. MKU 178.

1. Adams, R. L. and Burdon, R. H. (eds.), *Molecular Biology of DNA Methylation*, Springer-Verlag, New York, 1985.
2. Arber, W. and Linn, S., *Annu. Rev. Biochem.*, 1969, **38**, 467-500.
3. Kessler, C. and Manta, V., *Gene*, 1990, **92**, 1-248.
4. Razin, A. and Cedar, H., *Microbiol. Rev.*, 1991, **55**, 451-458.
5. Desikachary, T. V. (ed.), *Cyanophyta*, Indian Council of Agricultural Research, New Delhi, 1959.
6. deMarsac, N. T. and Houmard, J., in *The Cyanobacteria* (eds. Fay. P. and Van Balan, C.), Elsevier Science Publishers, Amsterdam, 1987.
7. Zehr, J. P., Okhi, K., Fujita, Y. and Landy, D., *J. Bacteriol.*, 1991, **173**, 7059-7062.
8. Sambrook, J., Fritsch, E. F. and Maniatis, T. (eds.), *Molecular Cloning: A Laboratory Manual*, 2nd edn., Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, 1989.

ACKNOWLEDGEMENTS. We thank Prof. G. S. Venkataraman for his constant encouragement. K. S. S. was a recipient of a CSIR Senior Research Fellowship.

Received 28 September 1992; accepted 9 October 1992

Apiospora camptospora — A new fungus causing stalk rot on maize in India

S. S. Lambhate, W. D. More and M. B. Khetmalas
Mahatma Phule Agricultural University, Rahuri 413 722, India

We observed stalk rot of maize (*Zea mays* L.) during regular survey of diseases. One of the pathogens responsible for disease was identified as *Apiospora camptospora* Penz and Sacc., a new fungus on maize in India.

DURING the regular survey of diseases, the maize culture Manjri composite was found to show symptoms which resembled stalk rot at the All India Co-ordinated Maize

Improvement Project of the Mahatma Phule Agricultural University, Rahuri.

The symptoms are similar to stalk rot caused by *Fusarium*. The lower leaves became flaccid, wilted and rolled inwardly, while upper leaves of such plants became pale green and subsequently the whole leaf sheath becomes chlorotic. The lower internodes developed purple to brownish discoloration. In completely wilted plants, the pith became hollow and developed a pinkish to dirty brown colour. In culture, the fungus is whitish in colour with irregular, patchy growth. Sporodochia appeared ellipsoidal or elongate with black conidiophores. Mother cells measured in the range of 8-12 \times 4-7 μ m, conidiophores often pale, brown, up to 140 μ m long, 3-4 μ m thick, conidia round or polygonal in the face view, 20-32 μ m diameter, 14-15 μ m thick, mid to dark brown with a distinct hyaline, rim or germ

slit. The fungus was identified as *Apiospora camptospora* Penz and Sacc. (*Pteroconium* state) by the Director of the Commonwealth Mycological Institute, Kew, Surrey, London (Herb. IMI No. 298023). Mason¹ gave a list of synonyms for *Popularia vinosa* which had been recorded on sugarcane from Antigua, Uganda and the Philippines, other hosts recorded by Mason in Herb. IMI include *Zea mays*, *Bambusa blumeana* and *Setaria chevalier*.

The pathogenicity of the fungus was also tested on maize plants (Manjri composite) by growing the fungus in sterilized bamboo wood toothpicks. After a 20-day growth the toothpicks were inserted into the third internode of maize plants and covered with moist

cotton wool following the techniques of Young². The fungus was found pathogenic to maize plants (Manjri composite). During the course of this investigation ten more fungi [*Fusarium* (8 sp), *Rhizoctonia* and *Setosphaeria rostrata*] were also studied.

1. Mason, E. W., *Mycol. Pap.*, 1933, 3, 67.

2. Young, H. C., *J. Phytopathol.*, 1943, 33, 16.

ACKNOWLEDGEMENTS. We thank Dr D. L. Hawksworth, Director of the Commonwealth Mycological Institute, Kew, Surrey, England for identification of the fungus.

Received 14 September 1992; accepted 30 September 1992

MEETINGS/SYMPOSIA/SEMINARS

International Conference on Geoscience Education and Training

Place: Southampton, England

Date: 21–25 April 1993

Themes and Workshops: Geoscience education in schools: Earth sciences in the curriculum, Laboratory investigation and fieldwork, Resource materials and teaching approaches, Teacher education. Higher education: The geoscience degree—structures and objectives. Teaching methods, Resource materials for lecture and laboratory, Schools/higher education interface. Geoscience training for business, industry and public service: Vocational and technical training, Institution twinning and professional linkages. Environmental education for business and industry. Public understanding of geoscience: Working with the media, Working with politicians and planners, Adult education.

Contact: Dr Dorrik A V Stow.

GEOED Conference Convenor
or Mrs Esther Johnson,
GEOED Conference Secretariat,
Department of Geology,
University of Southampton,
Southampton, SO9 5NH
England

Tel: (0703) 593049

Fax: (0703) 593052

Telex: 47662 SOTONU G

or

R. Shankar, National Coordinator
Department of Marine Geology
Mangalore University
Mangalagangothri 574 199, India

Global Conference on Advances in Plant Diseases and their Management

Date: October 1994

Place: Udaipur, India

Technical sessions include: mycology and mushrooms, soil-borne plant pathogens, disease resistance and genetics of host-parasite interactions, disease assessment and epidemiology, developmental and unconventional aspects of disease control, diseases of forest trees and their management, post-harvest pathology and biodeterioration, crop disease control through chemicals, physiological plant pathology, bacteriology, nematology, virology and mollicutes.

Contact: Dr S. L. Choudhary,

Secretary, Global Conference on Advances in Plant
Diseases and their Management

Society of Mycology and Plant Pathology

College of Agriculture

Udaipur 313 001, India

Telephone: (91) 0294-28612

Cable: MYCOPATH