

A technique for inducing individual coiled anhydrobiotic nematode.

Une technique pour produire isolément des nématodes anhydrobiotiques spiralés

D. W. Freckman¹, Y. Demeure² and S. D. Van Gundy¹

Rubrique: J₂ - Y₁

Mots-clés : nématode - Aphelenchus avenae - Helicotylenchus dihystera - Acrobeloi

- des sp. - technique - anhydrobiose - spiratisation anhydrobiotique .

Congress Plant Pathology

Munich, Federal Republic of Germany

August 16 - 23, 1978

¹Department of Nematology, University of California, Riverside, CA, USA, 92521

²Laboratoire de Nematologie, ORSTOM, Dakar, Senegal

- 9 AVR. 1979

O. R. S. T. O. M.

Collection de Référence

n° M 3587 Bio Sols

FRECKMAN, D. W., DEMEURE, Y., and VAN GUNDY, S. D. (Department of Nematology, University of California, Riverside, USA and ORSTOM, B.P. 1386, Dakar, Senegal)

A Technique for Inducing Individual Coiled Anhydrobiotic Nematodes

Anhydrobiosis was induced in small quantities of nematodes (± 100) by slow desiccation on Millipore[®] filters using a modification of Simon's technique and dehydration schedule. Nematodes were pipetted onto the synthetic filters over vacuum and suspended in glycerine humidity chambers. The relative humidity of the chambers was regulated by adding glycerine to the chamber solutions with stirring. Tests for the degree of anhydrobiosis were % coiling and survival after exposures to P₂O₅ and MB. Nematodes tested were Aphelenchus avenae, Helicotylenchus dihystera, and Acrobeloides sp. The optimum dehydration schedule for induction of anhydrobiosis and survival of A. avenae and H. dihystera was two days at 100%, two days at 199%, two days 198% and two days at 97.7%. The optimum schedule for Acrobeloides was four days at each humidity. Dehydrated nematodes were exposed to P₂O₅ for up to 24 h or to MB for up to 82 h. The dehydration of all three nematodes induced 91 to 98% to coiling. Anhydrobiotic nematodes were more resistant to MB than nematodes not exposed to dehydration. Survival to both chemical treatments was not correlated to coiling but rather to duration of dehydration. Coiling appeared to be a short-term physical response to dehydration while anhydrobiosis was a longer term physiological response to slow dehydration.