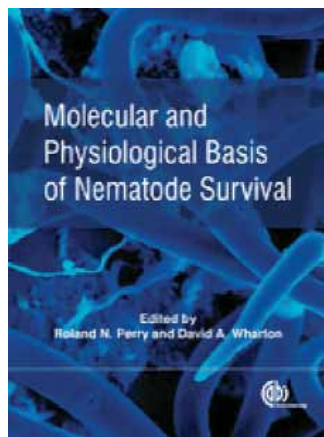


— BOOK REVIEW —



**MOLECULAR AND PHYSIOLOGICAL
BASIS OF NEMATODE SURVIVAL**

Perry R.N. and Wharton D.A., 2011
(Eds). CABI Publishing, Wallingford, UK.
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(320 pages)

Nematodes can be free-living or animal- or plant-parasitic. Free-living nematodes occupy terrestrial, marine and fresh water habitats feeding on microorganisms, protozoa or algae. They have colonised tidal zones as well as the deep sea, deserts and arctic environments. The potential of free-living and parasitic nematodes to establish in diverse and sometimes harsh environments is due to their ability to adapt to adverse conditions that prohibit growth and reproduction. Nematodes have developed survival strategies to overcome heat and cold, desiccation or osmotic stress, pressure or lack of oxygen. With this book the editors have gathered well recognised specialists in the area of stress tolerance research in nematology, who have summarised the latest scientific progress on behavioural, physiological and molecular mechanisms underlying the survival strategies of nematodes. Recent results from studies on genetics of stress tolerance have revealed a high degree of homology in genes and have provided evidence that many of these adaptive mechanisms are shared among different animal and plant taxa. During the last decades new methods of biophysics and molecular biology have been applied to understand stress response, particularly in relation to desiccation and temperature tolerance.

The basic level of understanding of how organisms cope with environmental stress has increased tremendously and as nematodes are “handy” research objects, they have often functioned as model organisms. This book on nematode survival cross-references effectively with findings in related scientific areas and thus is a valuable, in-depth introduction into general mechanisms of stress response, not only for nematologists.

Before getting into details on the different stress factors, which are described beginning with chapter 6, the reader can get a general overview on survival strategies by first consulting the last chapter “Biochemistry of survival”. In contrast to previous books, which have concentrated on survival of free-living nematodes, this book puts an additional emphasis on strategies that parasitic nematode species evolved to survive inside their hosts and on mechanisms to cope with the host’s defences against the invader. It reports on interactions between nematodes and their vertebrate or invertebrate hosts as well as with plants. An understanding of the physiological and molecular basis of these interactions is the first step for the development of control strategies. These aspects together with a chapter on nematodes used in biological control of insect pests thus also contribute to economically relevant subjects. Recently, the necromenic nematode *Pristionchus* has gained much attention. Unfortunately, the chapter on this nematode is disappointing and too short.

A gene and species index assists in utilising this book as source of information and facilitates accessing specific details. The editors Roland Perry and David Wharton can be congratulated for such a comprehensive and up-to-date book that will inform and stimulate students as well as senior scientists interested in survival strategies. It will attract not only nematologists but will serve the overall scientific community with an interest in stress responses and survival.

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