



Urban Pest Management: An Environmental Perspective

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An introduction by Kevin Sweeney and Partho Dhang gives the background of the book as the human population increases as the environment changes with rising global temperatures, widespread pollution and more people living in cities. They consider that future challenges to managing pests will be primarily due to pest populations rapidly adapting to the rise in mean global temperature. With over 55% of the world's population living in cities now, and this expected to rise to 68% by 2050 there is concern about the impacts on public health, sanitation, and housing. They set out the topics in 13 chapters by 18 authors.

Chapter 1 by Partho Dhang looks at the environmental perspective on urban pests and their management, which will change as more pests including invasive species will be in urban areas, especially as temperatures rise in temperate regions. This can initiate behavioural changes in pest species, eg pests being more resistant to pesticides and higher pest populations. Years ago, DDT was an ideal insecticide to control bed bugs, but now other chemicals and biopesticides are selected. Already many householders in urban areas use a range of pesticides, which will be affected by further increases of extreme weather.

Chapter 2 by Changlu and Richard Cooper considers bed bug management. The common bed bug *Cimex lectularius* L. a common pest in temperate areas and *C. hemipterus* (F.) in tropical and subtropical areas have been closely associated with humans, although can be found in poultry farms. Detection of the bed bugs is very important early on before infestations are well established, so visual inspections need to look for any signs of bed bug activity. Regular monitoring is also important to avoid low level infestations spreading.

Chapter 3 by Sam Bryks in Canada looks at challenges and opportunities for healthier environments using Integrated Pest Management for multi-dwelling low-income housing as IPM can reduce costs.

Chapter 4 by Zia Siddiqi in the USA reviews advances in pest control products and services in urban pest management.

Emphasis is given to advances in education, communication and pest control data to adopt business management systems and remote sensing to guide pest management practitioners.

Chapter 5 by Partho Dhang emphasises the role of insect baits to achieve sustainable management in urban areas. Various baits for controlling cockroaches and other urban pests are listed. The baits can contain certain insecticides, provided they do not act as a repellent. Slow acting, non-repellent and dose-independent are principal attributes of a good bait.

In Chapter 6 Steven Broadbent provides information on termite management technology in Australia. Failure to stop termites entering buildings despite use of large volumes of chemicals stimulated research into more environmentally friendly baiting systems to suppress and eliminate colonies of subterranean termites.

Chapter 7 by Janusz Swietoslowski and three others in Poland introduces the importance of microencapsulation technology so that the active ingredient is released in a fully controlled concentration, increasing the life of the formulation after treatment. It also reduces the concentration of the active ingredient, which prevents risk of exposure to the person applying the capsules, a factor that is being recognised by the pest control industry.

Chapter 8 by Roberto Pereira in the USA discusses the importance of insect light traps as an environmental solution to control flying insects. Variations in colour, light, and physical design allow development of many types of traps. Traps using an ultraviolet light [UV] light source were developed to provide continuous indoor treatment without interference. Removal of dead insects, maintenance and cleaning of the traps is important.

Chapter 9 by Nayem Hassan in the UK describes the use of pheromones in the food industry. These are used in controlling pests, mostly where food is stored, through mating disruption, mass trapping and aggregating insects at sites with biological control agents.

Chapter 10 by Kevin Sweeney concentrates on a global regulatory perspective for



present and future approaches to urban pest management. Global demand for pesticides is characterised by low toxicity, short residual life, and an increased specificity for the pest(s), while at the same time wanting highly efficacious products that can eliminate pests efficiently.

Chapter 11 by Steven Swinell refers to the need for Effective Regulation of the

Practice of Structural Pest Management, an essential part of rational urban pest management. The regulations are to ensure an acceptable level of compliance with human health, and environmental protection standards.

Chapter 12 by Ana Eugenia de Carvalho Campos and Tamara Nunes Lima-Camara, describes Emerging Urban Pests and Vector-borne Diseases in Brazil. As a vast country with a population of over 213 million, with 85% living in urban areas with diverse pests, including mosquitoes, sand flies, ants, termites, and rodents, scientists are challenged to find solutions for minimising pest populations and protect human health.

Chapter 13 by Huseyin Cetin and Yusuf Qzbel in Turkey reports on controlling sand flies of medical and veterinary importance as they are vectors of 20 *Leishmania* protozoan parasites and more than 60 arboviruses that threaten animal and human health. The methods of spraying walls in houses and using treated bed nets for controlling mosquitoes as vectors of malaria are also used to control sand flies, as are ground and aerial ultra-low volume (ULV) space sprays and thermal fogs.

This is an extremely important book throughout the World as it provides a wide-ranging account of the problems of controlling diverse pests in areas where humans are living. Each chapter has a significant list of references to help readers access further information. ■

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