

Preface

Pesticides have revolutionized life on this planet; however, they have also proven to be toxic for human health and environment. Indeed, the extent and severity of the toxicity was declared at the Stockholm Convention on Persistent Organic Pollutants where 9 of the 12 most dangerous and toxic organic chemicals were found to be pesticides. Traditionally, pesticides have been directed at a specific pest's life cycle as this required less pesticide and was considered to be more eco-friendly. However, this would not prevent pesticides from drifting away and potentially posing grave risks to the environment. In this book, we describe recent developments of controlled release nanoparticulate formulation of pesticides using biodegradable polymers as carrier. Technologies focusing on controlled-release of pesticide have two advantages: the pesticides are intact until sprayed and targets only the plants the pesticides are meant to protect. We have generalized the concepts to make the book useful in the post-graduate classes taught in our university and for advanced professionals alike.

While nanoparticles have revolutionized drug delivery effectively chaperoning the drug to target organs, delivery of pesticides to its intended site of action is still in the process of initial exploration. Additionally, there lies the concern of environmental safety of the fate of the pesticide-carrier. Consequently, while there have been books written on drug delivery, there are almost no available books on the topic of pesticide-delivery.

This book (a result of collaboration between scientists from Columbia University, City College of New York, and University of Delhi, India) is the first to focus exclusively on environmentally benign delivery of pesticides (controlled-release nanoparticulate formulation of pesticides using biodegradable polymers as carriers).

Targeted Delivery of Pesticides Using Biodegradable
Polymeric Nanoparticles

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