总的简介

《中国植物保护百科全书》是国家重点出版物出版规划项目、国家辞书编纂出版规划项目、国家出版基金资助项目，是我国首部植物保护领域系统、全面、权威的工具书。《中国植物保护百科全书》包括综合卷、植物病理卷、昆虫卷、杂草卷、农药卷、鼠害卷、生物防治卷、生物安全卷共8卷16册，约7800个词条，约2700万字。《中国植物保护百科全书》由李家洋、张守攻、吴孔明、方精云、方荣祥、朱有勇、康乐、钱旭红、陈剑平、康振生、陈宗懋、宋宝安、李正名、柏连阳14位院士领衔，中国科学院、中国农业科学研究院、中国林业科学研究院及全国相关院校、单位的3000余名业界知名专家撰稿、审稿，呕心沥血、艰苦奋斗，历时10年完成，是当代中国及世界植物保护领域科技成果的结晶。

《中国植物保护百科全书》集当代植物保护领域基本理论、全面知识、最新成果大成，对中国及世界植物保护和农业发展、粮食安全具有重要意义，填补了中国植物保护专业百科空白，是中国科技工作者对世界植物保护领域作出的重大贡献。

General Introduction

The *Encyclopedia of Plant Protection in China* is a key national publication planning project, a national dictionary compilation and publication planning project, and a project funded by the National Publishing Fund. It is the first systematic, comprehensive, and authoritative reference book in the field of plant protection in China. The encyclopedia comprises eight volumes and sixteen books, including the Comprehensive Volume, Volume on Plant Pathology, Volume on Insects, Volume on Weeds, Volume on Pesticides, Volume on Rodent Damages, Volume on Biological Controls, and Volume on Biosafety, with approximately 7,800 entries and around 27 million characters. The compilation of the encyclopedia was led by 14 academicians, including Li Jiayang, Zhang Shougong, Wu Kongming, Fang Jingyun, Fang Rongxiang, Zhu Youyong, Kang Le, Qian Xuhong, Chen Jianping, Kang Zhensheng, Chen Zongmao, Song Bao’an, Li Zhengming, and Bai Lianyang. It was a collaborative effort involving over 3,000 renowned experts from the Chinese Academy of Sciences, the Chinese Academy of Agricultural Sciences, the Chinese Academy of Forestry, and relevant universities and institutions across the country, who have contributed to the writing and review process with dedication and hard work for over ten years. This encyclopedia is a fruit of the scientific and technological achievements in the field of plant protection in contemporary China and around the world.

The *Encyclopedia of Plant Protection in China* compiles the basic theories, comprehensive knowledge, and the latest results in the contemporary field of plant protection. It is of great significance to plant protection and agricultural development, as well as food security in China and the world, filling the gap in professional encyclopedias of China’s plant protection. It represents a major contribution by Chinese scientists to the global field of plant protection.

《中国植物保护百科全书》是中国林业出版社国家出版精品战略引领下推出的鸿篇巨制。中国林业出版社历时10年余，举全社之力，勇担科技文化传播者的重任，是“国之大者”情怀的生动实践。

《中国植物保护百科全书》的出版，事关中国科研成果的传承，事关在世界讲好中国农业、中国植物保护故事，为全球粮食安全提供科技路径，事关中国植保学科学术国际影响力的提升，事关中国科技出版强国地位进程的推进。

向为《中国植物保护百科全书》出版作出贡献的单位、专家和编辑致以崇高的敬意！

The *Encyclopedia of Plant Protection in China* represents a monumental work that has been published under the auspices of the national publishing quality strategy of China Forestry Publishing House. Spanning over a decade, the publishing house has channeled all its resources and efforts towards fulfilling its duty of disseminating scientific and technological culture, which stands as a testament to its commitment towards engaging in "Matters of National Significance" in a tangible manner.

The release of this encyclopedia is a cornerstone for the preservation and continuation of China's rich legacy in scientific research. It serves to narrate the story of Chinese agriculture and plant protection to global audience.

Moreover, this encyclopedia provides a scientific roadmap aimed at bolstering global food security. It plays a pivotal role in enhancing the international academic prestige of China's plant protection disciplines, and marks a significant step forward in the journey towards solidifying China's position as a powerhouse in the scientific and technological publishing domain.

Our highest respect goes to the units, experts, and editors who have contributed to the publication of the *Encyclopedia of Plant Protection in China*.

各分卷简介：

《综合卷》

《中国植物保护百科全书》是一部紧跟中国植物保护最新政策及发展动态，全面介绍植物保护学科体系的著作。《综合卷》编纂工作从2015年3月启动以来，历经7年的时间，汇集了来自全国百余家科研、教学、管理和出版单位的500 多位专家。为了保证编纂工作顺利进行和出版质量，我们邀请了植物保护领域的 32 位知名专家组成编委会，以保证编写内容的科学性、准确性、严谨性和权威性。

《综合卷》共收 496 个条目，条目按条目标题第一个字的汉语拼音字母顺序排列，绝大多数条目标题后附有对应的英文。内容包括植物保护学科的定义和范围、中国植物保护学科的发展史、中国植物保护的科研机构和科研平台、中国植物保护相关的重大成果、中国植物保护领域的重要科学家、植物保护研究技术和植物保护条例等。植物保护学通论由叶恭银、方琦撰写；中国植物保护学科发展史由冯浩和黄丽丽撰写；人物 65 条，由马忠华任分支负责人；著作 151 条，由李毅和陈功友任分支负责人；期刊、机构和学会分别为 65 条、33 条、24 条，由张杰、耿丽丽任分支负责人；条约公约法律法规 19 条，由张礼生、周雪平任分支负责人；技术 86 条，由谭新球任分支负责人；数据库 6 条，由杨青任分支负责人；成果 45 条，由周雪平、杨秀玲任分支负责人。

《中国植物保护百科全书》历经十年面世是中国植物保护领域出版的里程碑。我们衷心希望这部著作的出版，能让植物保护领域的科研人员、农林大中专院校师生和基层农技人员从中学习植物保护相关的知识，为科研、教学和植物保护提供参考。我们更期待这套书成为大家科研、教学和学习道路上不可或缺的好伙伴！

Introduction to Each Volume

Comprehensive Volume

*Encyclopedia of Plant Protection in China* provides a thorough introduction to the disciplinary system of plant protection, incorporating the most recent policies and advancements within the field in China. Initiated in March 2015, the seven-year endeavor of compiling the Comprehensive Volume has brought together a prestigious group of over 500 specialists from more than 100 institutions nationwide, spanning scientific research, education, management, and publishing sectors. To ensure the smooth development and maintain the high quality of the publication, a 32-member editorial board, comprising distinguished experts in plant protection, was established. This board was tasked with ensuring that the content is scientifically sound, accurate, meticulously reviewed, and authoritative.

The Comprehensive Volume comprises 496 entries, organized alphabetically based on the Pinyin of the first character in each title, complemented by corresponding English translations for the majority of entries. The of content encompasses the definition and scope of the plant protection discipline, a historical overview of plant protection in China, an overview of scientific research institutions and platforms dedicated to plant protection in China, a showcase of significant achievements in Chinese plant protection, profiles of notable scientists within the field, an exploration of plant protection research technologies, and an outline of relevant regulations, among other topics.

Ye Gongyin and Fang Qi co-authored “The General Theory of Plant Protection”. Feng Hao and Huang Lili wrote the history of plant protection in China. Ma Zhonghua managed 65 entries related to biography. Li Yi and Chen Gongyou handled 151 entries regarding works. Zhang Jie and Geng Lili curated 65 entries on journals, 33 on institutions, and 24 on societies. Zhang Lisheng and Zhou Xueping were in charge of 19 entries concerning treaties, conventions, laws, and regulations. Tan Xinqiu was tasked with 86 entries on technologies. Yang Qing oversaw six entries on databases. Lastly, Zhou Xueping and Yang Xiuling were responsible for 45 entries detailing achievements.

The publication of the *Encyclopedia of Plant Protection in China*, the culmination of a decade's dedicated effort, marks a significant milestone in the field of plant protection publishing in China. We earnestly hope that this work will serve as a valuable resource for researchers in the field, educators and students at agricultural and forestry colleges and universities, as well as for grassroots agricultural technicians, facilitating their understanding of plant protection and supporting their research, teaching, and practice. We anticipate that this comprehensive set of volumes will prove to be an indispensable companion for all those journeying in the realms of research, education, and the advancement of plant protection knowledge.

《植物病理卷》

本卷汇集了来自全国100多个科研、教学、管理和出版单位的500多位专家、教授的心血和智慧。为了保证编纂工作的顺利进行和出版质量，我们邀请了植物病理学陈宗懋院士、南志标院士、朱有勇院士、康振生院士和近50位行业知名专家组成专门的编委会，以保证编写内容的科学性、准确性、严谨性和权威性。

本卷围绕植物病理学科“主线”和基础理论知识、植物病害对象“两翼”展开。共收录了1700 多个词条，其中植物病理学基础知识词条217条，涉及植物病理学概论以及病原生物学、病害流行学、分子植物病理学、病害防治学等分支学科领域；植物病害对象词条1480多条，涉及粮食作物、油料作物、经济作物、蔬菜、瓜果、林木、热带作物、观赏植物、药用植物等病害单元。为了便于准确识别和诊断各类植物病害，书中附有涉及病原和病害症状的插图约4000 幅。为了保持百科全书历史资料的完整性，虽然有少数植物病害在进入 20 世纪末以来，种群数量明显减少，发生危害显著减轻，已很少有人研究，但是本书还是进行了收录和编写，以期为读者提供有关历史信息。

*Volume on Plant Pathology*

This volume is a culmination of the expertise and insights of over 500 experts and professors from more than 100 national research, teaching, management, and publishing institutions. To ensure the smooth compilation process and to maintain a high standard of publication quality, a dedicated editorial committee was established. It comprises distinguished Academicians in plant pathology, including Chen Zongmao, Nan Zhibiao, Zhu Youyong, and Kang Zhensheng, alongside nearly 50 esteemed experts in the field. This committee was instrumental in ensuring the scientific rigor, accuracy, and authority of the content.

The volume is structured with plant pathology as the central theme, referred to as the "mainline," complemented by its foundational theories and plant diseases, collectively described as the "two wings." It encompasses over 1,700 entries, with 217 focused on the fundamental knowledge of plant pathology, spanning general overviews and sub-disciplines such as pathogen biology, epidemiology, molecular plant pathology, and disease management. Moreover, the volume addresses over 1,480 entries on specific plant diseases, covering a wide range of plant types including grains, oil-bearing crops, cash crops, vegetables, fruits, trees, tropical crops, ornamentals, and medicinal plants. To assist with precise identification and diagnosis, the volume includes approximately 4,000 illustrative images that depict pathogens and symptoms of diseases. To maintain the integrity of the encyclopedia of historical material, the volume also documents plant diseases that have become less common or studied since the late 20th century, providing a comprehensive historical context for readers.

《生物防治卷》

本卷涉及植物虫害、病害生物防治和栽培措施控制的术语、词条 370余条，分为植物病害生物防治、植物虫害生物防治、生态生物防治三大部分。由中国工程院朱有勇院士以及国家林业和草原局森林保护学重点实验室主任杨忠岐担任主编，云南农业大学李成云、中国农业大学王琦、浙江大学刘树生、中山大学庞虹、中国林业科学研究院张永安、南京农业大学李保平等来自全国多个科研、教学和管理单位的130余位专家组成编纂委员会。农林有害生物的生物防治和生态防治是国际国内未来重点发展的新趋势、新热点和新产业，无论在理论探索、技术创新还是产品开发方面，都展示出强劲的发展势头和巨大的应用潜力。

Volume on Biological Control

This volume covers over 370 terms related to the terminology of biological control and cultivation measures for the control of plant pests and diseases. It is divided into three parts: biological control of plant diseases, biological control of plant pests, and ecological biological control. Academician Zhu Youyong from the Chinese Academy of Engineering and Yang Zhongqi, Director of Key Laboratory of Forest Protection of the State Forestry and Grassland Administration served as the chief editors. The compilation committee included over 130 experts from various research, teaching, and management institutions nationwide, such as Li Chengyun from Yunnan Agricultural University, Wang Qi from China Agricultural University, Liu Shusheng from Zhejiang University, Pang Hong from Sun Yat-sen University, Zhang Yong'an from the Chinese Academy of Forestry, and Li Baoping from Nanjing Agricultural University. Biological and ecological control of agricultural and forestry pests is a new trend, hot topic, and emerging industry for future development both domestically and internationally. It demonstrates strong momentum and immense potential for application in theoretical exploration, technological innovation, and product development.

《杂草卷》

本卷由强胜教授、方精云院士主编，汇集中国杂草学界顶尖专家百余人撰稿，历时7年，是中国首部全面、准确、系统、实用的杂草学研究和应用权威工具书。杂草卷由卷一、卷二组成，242万字，收录了678个条目，涉及学科概论、杂草科学界、杂草生物学、杂草生态学、杂草分类、杂草防治等方面。所有物种词条均附有生境、成珠、花序、种子、果实、幼苗等图片，有利于杂草识别与防治。

杂草学作为一门学科，其发展历程源远流长。从最初的简单观察和描述，到后来的深入研究和实践应用，杂草学逐渐形成了完整的学科体系。随着科技的不断进步和人们对生态环境保护的日益重视，杂草学的研究领域也在不断拓宽和深化。

杂草化学防治技术的发展在杂草学学科体系的形成和发展中起到了重要的推动作用。通过化学防治，人们可以更加高效地控制杂草的生长和扩散，保护农作物和生态环境的健康。同时，这也促进了杂草学在防治技术方面的不断创新和进步。除草技术的应用是杂草学学科体系中的重要组成部分。在实际生产和生活中，除草技术的应用范围广泛，包括农业、园艺、林业等多个领域。通过采用合理的除草技术，人们可以有效地控制杂草的危害，提高农作物的产量和品质，改善生态环境。

《中国植物保护百科全书：杂草卷》展示了杂草学的丰富内涵和广阔前景，为更好地管理和利用杂草提供了有力的支持和帮助。同时，我们也应该认识到，杂草的防治和管理是一个复杂而长期的过程，需要我们在实践中不断探索和创新，才能为生态环境的保护和农业的可持续发展作出更大的贡献。

Volume on Weeds

This volume, spearheaded by Professor Qiang Sheng and Academician Fang Jingyun as chief editors, is a compilation of contributions from over one hundred top experts in the field of weed science in China who have dedicated a significant seven years to this endeavor. It is the first comprehensive, accurate, systematic, and practical authoritative reference book on weeds research and application in China and consists of two sub volumes, with a total of 2.42 million characters and 678 entries, covering such aspects as overview of the discipline, the weed science community, weed biology, weed ecology, weed classification, and weed control. All species entries are accompanied by images of habitats, mature plant, inflorescences, seeds, fruits, and seedlings, which facilitate the identification and control of weeds.

The study of weeds has a rich and extensive history. Beginning with basic observations and descriptions, it has evolved into a discipline with sophisticated research and practical applications. Weed science has progressively developed a comprehensive system of study. As science and technology continue to advance, and with a growing emphasis on ecological and environmental conservation, the field of weed science is experiencing ongoing expansion and increased depth of research.

The advancement of chemical weed control technology has been pivotal in shaping and advancing the discipline of weed science. This technology enables more efficient management of weed growth and proliferation, thereby safeguarding the health of crops and the integrity of the ecological environment. Concurrently, it fosters ongoing innovation and progress in weed control methodologies within the field.

The implementation of weed control techniques constitutes a crucial component of the weed science discipline. These techniques see extensive application across various sectors, including agriculture, horticulture, and forestry. By employing sound weed control practices, it is possible to significantly mitigate the detrimental effects of weeds, thereby not only boosting crop yields and improving their quality but also contributing positively to the ecological environment.

The *Encyclopedia of Plant Protection in China: Volume on Weeds* showcases the rich connotations and broad prospects of weed science, providing strong support and assistance for better management and utilization of weeds. At the same time, we should also recognize that the control and management of weeds is a complex and long-term process. Only through continuous exploration and innovation in practice can we make a greater contribution to the protection of the ecological environment and the sustainable development of agriculture.

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《农药卷》

《中国植物保护百科全书·农药卷》旨在集成新中国成立以来我国农药学科领域的发展成果，反映当今新农药创制以及植物病虫草害防治的整体概貌，同时在一定程度上反映国际农药发展的主要成就和趋势；重点突出在现代生物技术和信息技术飞速发展背景下，农药研究领域在靶标基础理论研究、新品种创制、新剂型和新药械的研发、生物测定技术的研发、关键防治技术开发与应用方面取得的重大突破和重要成果，尤其是新农药创制的策略、新的作用靶标、农药与环境、农药与食品安全、农药与生态安全的相互关系等方面的基础研究成果，以展示农药的未来发展方向与创制策略。

本卷围绕农药这一主线以及农药相关的基础理论知识展开，涉及农药的发展历史、农药杀虫剂、杀菌剂、除草剂、植物生长调节剂、杀鼠剂的各个品种、农药管理、农药工业、农药图文信息、农药团体、农药剂型、农药使用技术、农药质量控制与分析、农药残留与食品安全、农药生物活性测定、农药毒性、农药作用机理、农药与环境的内容，共收录了2198个词条，其中涉及农药品种1555条，包括品种的化学名称、CAS登记号、分子式、相对分子质量、结构式、开发（生产）单位、理化性质、毒性、剂型、作用方式及机理、防治对象、使用方法、注意事项、允许残留量和参考文献等信息。书中还附有药械机具插图的彩图。为了保证百科全书历史资料的完整性，虽然有少数品种目前已经禁用，但历史上曾经发挥了巨大作用，我们也将其收录和编写，以期为读者提供有关历史信息。

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Volume on Pesticides

The *Encyclopedia of Plant Protection in China: Volume on Pesticides* is designed to compile the accomplishments in the development of China's pesticide science since the establishment of the People's Republic of China. It provides a comprehensive overview of the current status and the general situation in the development of new pesticides, as well as the control of plant diseases, pests, and weeds. Additionally, it reflects, to a certain extent, the principal achievements and trends in the global development of pesticides.

The encyclopedia particularly emphasizes the significant breakthroughs and vital outcomes in pesticide research, which have been made possible by the rapid advancements in modern biotechnology and information technology. Coverage includes fundamental research on target theoretical studies, the development of new varieties, the innovation of new formulations and machinery, the advancement of bioassay techniques, and the evolution and application of key control technologies. It places special emphasis on presenting the fundamental research findings concerning new pesticide formulation strategies, new targets of action, and the interrelationship between pesticides and the environment, food safety, and ecological safety. This showcase aims to illustrate the prospective direction and strategic formulation for the future development of pesticides.

This volume is centered on the primary theme of pesticides, encompassing the fundamental theoretical knowledge associated with them. It traces the historical development of pesticides, delves into various categories including insecticides, fungicides, herbicides, plant growth regulators, and rodenticides, and addresses topics such as pesticide management, the pesticide industry, graphical and textual information on pesticides, pesticide community, pesticide categories, application technologies, quality control and analysis, residue management and food safety, bioactivity assessment, toxicity, mechanisms of action, and the interplay between pesticides and the environment.

The volume comprises 2,198 entries, with 1,555 dedicated to specific pesticide varieties. For each variety, detailed information is provided, including the chemical name, CAS registration number, molecular formula, relative molecular mass, structural formula, development (production) unit, physical and chemical properties, toxicity, formulation, mode of action and mechanism, targeted prevention and control measures, usage methods, precautions, allowable residue limits, and reference materials.

The volume is further enhanced with color illustrations of pesticide-related machinery and equipment. In the interest of preserving historical integrity, the encyclopedia includes entries on a few varieties that have been banned now but had played significant role in history, so as to provide relevant historic information to readers.

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《昆虫卷》

本卷共收录了1400个条目，近 1200 种昆虫，包括农业昆虫、林业昆虫等。

全书总结了近代以来中国昆虫学的发展历史、体现了中国昆虫学研究的主要成就、反映了当今国内外昆虫学的发展现状与趋势，既涵盖昆虫学所有分支学科的基础知识，又紧跟学科发展的最新前沿。每个条目均尽可能简明扼要地对相关知识做了叙述和介绍，昆虫条目包括分类地位、危害状、分布范围、寄主植物、形态特征、生物学特性和防治方法。书中还配有插图近6000幅，以便读者理解释文，或按图索骥，快速而准确地识别相应的昆虫种类。

全书由来自全国近 100 家科研、教学、管理和出版单位的 300 多位专家学者共同编撰完成。全书共设9个分支，总论中基础部分，由康乐、王琛柱和孙江华负责；总论中人物、昆虫历史、机构、期刊部分，由彩万志负责；农作物害虫部分，由陈学新、乔格侠和戈峰负责，参加人有康乐、吴孔明、黄勇平、卜文俊、吴益东、张润志、梁广文、尤民生、刘树生、张传溪、武春生、张雅林；蔬菜害虫部分，由张友军负责；果树害虫部分，由张帆、刘同先负责；林业害虫部分，由骆有庆和嵇保中负责，参加人有陈辉、张真、魏美才、张飞萍、迟德富、张润志、武三安、宗世祥；桑蚕昆虫部分，由夏庆友负责；草业害虫部分，由任国栋、庞保平负责；储物害虫部分，由陈乃中负责。

Volume on Insects

This volume encompasses 1400 entries, detailing approximately 1200 insect species pertinent to agriculture and forestry. It provides a comprehensive summary of the development history of entomology in China since the modern era, highlighting the principal accomplishments in Chinese entomological research and reflecting the current state and emerging trends in entomology both domestically and internationally. It encompasses the foundational knowledge across all sub-disciplines of entomology while staying current with the latest advancements at the forefront of the field. Each entry aims to deliver a succinct and lucid exposition of the relevant information. The entries for insects detail their taxonomic classification, the extent of the harm they cause, their geographical distribution, the plants they inhabit, their morphological features, biological characteristics, and methods for prevention and control. Additionally, the book is enriched with nearly 6,000 illustrations, which serve to aid readers in grasping the textual content and in swiftly and precisely identifying the relevant insect species through visual reference.

The volume was collaboratively authored by over 300 experts and scholars from nearly 100 research, teaching, management, and publishing organizations nationwide. It consists of 9 sections, with the basis section of the pandect being responsible by Kang Le, Wang Chenzhu, and Sun Jianghua; the sections on biography, insect history, institutions, and journals within the pandect were compiled by Cai Wanzhi; the crop pests section was compiled by Chen Xuexin, Qiao Gexia, and Ge Feng, with contributions from Kang Le, Wu Kongming, Huang Yongping, Bu Wenjun, Wu Yidong, Zhang Runzhi, Liang Guangwen, You Minsheng, Liu Shusheng, Zhang Chuanxi, Wu Chunsheng, and Zhang Yalin; the section on vegetable pests was compiled by Zhang Youjun; the section on fruit tree pests by Zhang Fan and Liu Tongxian; the section on forestry pests by Luo Youqing and Ji Baozhong, with contribution from Chen Hui, Zhang Zhen, Wei Meicai, Zhang Feiping, Chi Defu, Zhang Runzhi, Wu San'an, and Zong Shixiang; the section on sericulture insects by Xia Qingyou; the section on grassland pests by Ren Guodong and Pang Baoping; and the section on storage pests by Chen Naizhong.

《鼠害卷》

本卷词条共 750 余条，总字数约 140 万字。由国际动物学会主席张知彬研究员任主编；中国科学院长沙农业生态所研究员王勇研究员、农业部全国农技推广中心郭永旺研究员、中国农业科学院植物保护研究所刘晓辉研究员担任副主编； 由国内从事鼠害研究方面的科学家共同组成编纂委员会。本卷主要内容包括综论，人物，机构团体，期刊、著作、事件，法律法规，会议，科技奖励，鼠类与社会文化, 害鼠生物学，害鼠分类与进化,害鼠分子生态,害鼠生理生态，害鼠营养生态，害鼠行为生态，害鼠种群生态，害鼠群落生态与系统生态，害鼠对全球变化的响应，农田鼠害，草原鼠害，林业鼠害，鼠传疾病，鼠害防治，鼠害监测，重大害鼠等。

Volume on Rodent Damage

This volume contains over 750 entries with a total of approximately 1.4 million characters. It was edited by Zhang Zhibin, the President of the International Society of Zoological Sciences, and co-authored by Wang Yong, Research Fellow of Institute of Subtropical Agriculture, Chinese Academy of Sciences; Guo Yongwang, Research Fellow of the National Agro-Tech Extension and Service Center, Ministry of Agriculture; and Liu Xiaohui, Research Fellow of the Institute of Plant Protection, Chinese Academy of Agricultural Sciences. The editorial committee is composed of scientists engaged in rodent damage research in China. The volume encompasses introduction, biography, institutions and organizations, journals, works, events, laws and regulations, conferences, scientific and technological awards, rodents and social culture, biology of harmful rodents, classification and evolution of harmful rodents, molecular ecology of harmful rodents, physiological ecology of harmful rodents, nutritional ecology of harmful rodents, behavioral ecology of harmful rodents, population ecology of harmful rodents, community ecology and system ecology of harmful rodents, the response of harmful rodents to global changes, rodent damages to farmland, rodent damages to grassland, rodent damages to forests, rodent-borne diseases, rodent control, rodent monitoring, and major harmful rodents.

《生物安全卷》

本卷分两大部分：入侵生物学和转基因生物安全学

“入侵生物学”部分收录词条 195 个，400 多幅图，由中国农业科学院植物保护研究所万方浩研究员任主编，国内从事入侵生物学研究领域的专家学者共同组成编纂委员会。本部分内容涉及生物入侵领域的各个方面，包括入侵生物学学科形成与发展、基本概念、入侵过程、入侵种的入侵性、生态系统的可入侵性、入侵生物的管控与控制等。同时，还对农林重要入侵物种生物学及其防控技术、造成重大影响的生物入侵事件、重要入侵生物数据库和相关的法律法规等进行了介绍。

“转基因生物安全学”部分收录词条420个，约60幅图，由中国农业科学院副院长吴孔明院士任主编，国内从事转基因生物安全学研究领域的专家学者共同组成编纂委员会。本部分内容包括转基因生物安全学的基本概念、发展史，转基因生物食用、饲用和环境安全评价，转基因生物分子特征分析、抽样检测和风险监测与控制，以及转基因生物安全管理法规体系等。同时，从科普的角度回应和澄清了公众关注的转基因生物争论问题。

本卷是一部荟萃生物入侵与转基因生物安全科学知识的工具书，我们编纂过程中注重科学性、系统性、时代性和科普性的融合统一，希望能够满足相关科研教育工作者、大中专院校学生、政府管理部门及普通公众的需求。

Volume on Biosafety

This volume is composed of two sections: Invasion Biology and Genetically Modified Organism (GMO) Biosafety.

Invasion Biology section includes 195 entries with over 400 illustrations. It was edited by Wan Fanghao, Research Fellow of the Institute of Plant Protection, Chinese Academy of Agricultural Sciences; the editorial committee is composed of experts and scholars engaged in invasion biology research in China. This section covers various aspects of the field of biological invasions, including the formation and development of invasion biology as a discipline, basic concepts, invasion processes, invasiveness of invasive species, invasibility of ecosystems, and management and control of invasive species. It also introduces the biology of important invasive species in agriculture and forestry and their control techniques, significant biological invasion events, databases on key invasive species , and related laws and regulations.

Genetically Modified Organism (GMO) Biosafety section includes 420 entries with about 60 illustrations. It was edited by Academician Wu Kongming, the Vice President of the Chinese Academy of Agricultural Sciences; the editorial committee is composed of experts and scholars engaged in GMO biosafety research in China. This section covers the basic concepts of GMO biosafety, the history of its development, assessment for consumption, feed use, and environmental safety of GMOs, molecular characteristic analysis of GMOs, sampling detection, and risk monitoring and control, as well as the regulatory system for GMO safety management. It also addresses and clarifies public concerns about GMOs from a popular science perspective.

This volume is a reference book that compiles knowledge of biological invasions and GMO biosafety. During the compilation process, we focused on the integration of scientificity, systematicness, contemporaneity, and popular science to meet the needs of relevant researchers, educators, students of colleges and universities, government agencies, and the general public.

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