Nature Farming and Microbial Applications


Nature farming has been applied repeatedly in Japan, India, Thailand, China, Mexico, Brazil, Chile, Argentina, and the United States, among other nations, as a chemical-free, organic farming technique specifically adapted to climate and agricultural management conditions. The present book is a special issue covering history, principles, and practical aspects of nature farming written by scientists from the International Nature Farming Research Center in Nagano, Japan and their co-workers from other universities and institutes, mainly from China, Japan, Canada, and Denmark. The book has been co-published as Journal of Crop Production, Volume 3, Number 1 (#5) 2000, emphasizing microbial inoculation and its effect on the growth and physiology of crops. The book consists of two parts: Part I, “Nature Farming” and Part II, “Microbial Applications.” Part I includes 12 reports, beginning with the history, principles, and perspectives of nature farming, which needs some explanation. Nature farming was advocated by the Japanese philosopher Mokichi Okada in 1935 as part of a philosophy including aspects of human health, the protection of life, and the integrity of the natural world. No synthetic chemical fertilizers or pesticides are used in this farming system. Furthermore, animal and human manure, urban sewage, and other untreated wastes are prohibited from use as organic soil amendments, while composts from plant materials (e.g., rice straw, husks, and bran) or industrial processing wastes (e.g., oil mill sludge) are recommended. The principles of nature farming are based on five requirements: (i) production of safe and nutritious food ensuring good health, (ii) economical and spiritual beneficience to both producers and consumers, (iii) sustainability and feasible practicability, (iv) conservation and protection of the environment, and (v) production of sufficient high-quality food for an expanding world population. Thus, research activities in nature farming concentrate on analyzing and sustaining soil quality, crop protection, raising livestock, and agricultural converting processes.

The first section on historical aspects is followed by reports from a range of practical applications of nature farming in Japan and China, highlighting a diversity of special topics such as fertilization, soil conservation, pest control, soil reclamation, and improving fruit yields and quality. Each of the reports is well organized, clearly written, and presented in a journal article format, reflecting the expertise of the editors and their co-workers. Numerous and valuable literature references are cited, although some are hardly accessible. Part II includes 18 articles, covering direct and indirect effects of organic fertilizers and microbial inoculants in a broad variety of applications, such as biocontrol of pathogens and pests, effects on growth, yields and quality of fruit, and environmental protection. Other contributions specialize on methodologies including synthesis of the subject of physical science. I believe they have succeeded in their goal. I would be very pleased if the teaching of soils, agronomy, and environmental science had mastered the content of this text. The treatment of chemistry and physics in one 541-page book is brief but superfluous.

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The chapters begin with learning objectives stated in pedagogical terms. The content is subdivided with bold titles for each chapter. New terms and concepts are defined in paragraphs where they first appear. Concepts are usually presented in the context of diagrams, graphs, and tables. The use of color is limited, but it is effectively employed to highlight important points. The book is well-organized, with clear sections and subsections, making it easy to follow the progression of ideas. The authors provide a comprehensive overview of the subject, covering both theoretical foundations and practical applications. The book is intended for technical and junior college courses dedicating suitable for technical and junior college courses dedicating suitable for technical and junior college courses dedicating higher math.

Physical Science: What the Technology Professional Needs to Know


This book is part of the John Wiley & Sons “Legacy” series and is an attempt to recombine physics and chemistry as an integrated whole, reflecting the 17th century, when “natural philosophy” began and used the tools and methods of science to study the earth, light, and heavens. The audience for the book appears to be the junior–senior level of high school, but the book is suitable for technical and junior college courses to incorporate the treatment of both chemistry and physics encompassing topics of both chemistry and physics in one 541-page book is brief but superfluous.

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