

Organic Farming In India

The Green Revolution technologies enhance use of chemical pesticides and fertilizers in India; they make the country self-sufficient. However, it negatively affects farmers' health and the environment, and causes instability of agriculture production. The Neem pesticide, one of the most affordable eco-friendly organic pesticides, is considered to be one of the best alternatives to chemical pesticides although the adoption rate is still low. We investigated how to increase the use of eco-friendly Neem pesticides for organic agriculture through the research on benefits of the Neem pesticide and social and political situations in India's domestic organic markets. Various researchers show scientific aspects of the Neem pesticide. They claim that making the Neem pesticide is time-consuming with slow and uncertain results; however, none of the previous researcher examines the above matter from the farm management and socio-economic point of views. In our research, we found that the adoption rate of the Neem Pesticide varies by farmer's education, the size of their farmlands, the number of available family labors, and other various factors.

Should you buy organic food? Is it just a status symbol, or is it really better for us? Is it really better for the environment? What about organic produce grown thousands of miles from our kitchens, or on massive corporately owned farms? Is "local" or "small-scale" better, even if it's not organic? A lot of consumers who would like to do the right thing for their health and the environment are asking such questions. Sapna Thottathil calls on us to rethink the politics of organic food by focusing on what it means for the people who grow and sell it—what it means for their health, the health of their environment, and also their economic and political well-being. Taking readers to the state of Kerala in southern India, she shows us a place where the so-called "Green Revolution" program of hybrid seeds, synthetic fertilizers, and rising pesticide use had failed to reduce hunger while it caused a cascade of economic, medical, and environmental problems. Farmers burdened with huge debts from buying the new seeds and chemicals were committing suicide in troubling numbers. Farm laborers suffered from pesticide poisoning and rising rates of birth defects. A sharp fall in biodiversity worried environmental activists, and everyone was anxious about declining yields of key export crops like black pepper and coffee. In their debates about how to solve these problems, farmers, environmentalists, and policymakers drew on Kerala's history of and continuing commitment to grassroots democracy. In 2010, they took the unprecedented step of enacting a policy that requires all Kerala growers to farm organically by 2020. How this policy came to be and its immediate economic, political, and physical effects on the state's residents offer lessons for everyone interested in agriculture, the environment, and what to eat for dinner. Kerala's example shows that when done right, this kind of agriculture can be good for everyone in our global food system.

The global changes warranted fastness in food production system and fast foods. In tune with demand, crop production also oriented accordingly. However, the proverb 'Health is a Wealth' is reminded us to keep vigil on system and method of food production and food safety. The ill-effect of conventional chemical based farming well documented and public realized the importance organically produced food and efforts are being made to popularize the organic production. India is a "Land of Spices", each state or union territory in India cultivates one or other spice. Since spices form a part of many medicines the demand for organically produced spices is increasing considerably. Assuming a market growth of 10% in Europe, USA and Japan for organic spice products the world demand for organic spices may grow to 57000 tonnes in the next 10 year. Large scale use of high analysis fertilizers and pesticides result environmental hazards and imbalances in soil nutrients. Since spices are high valued and export oriented in nature it is imperative to keep the levels of pesticide residues below tolerance limits in view of the standards set by the importing countries. Hence the book on

"Organic Spices" is timely and covers all aspects of organic spice production. The topic includes historical spice trade and importance of spices in food chain. Brief account on organic agriculture movement in the world and its present status and opportunity for organic spices in the world market are given. The chemistry and different methods of composting are included in the organic manures chapter will be informative. Microbes play a greater role in agriculture, a separate chapter devoted on microbes and plant growth promoting rhizobacteria would definitely enrich the reader. Not only that, the topics on biological control of insect pests, nematodes, fungus and bacteria of spices highlighted in separate chapters would be of interest in organic production system. The importance, composition, uses, botany and varieties, organic way of production of spices like black pepper, cardamom, ginger, turmeric, chillies and paprika, nutmeg, vanilla, seed spices like cumin, fennel, fenugreek, coriander and their harvest and post harvest processing are enumerated. The chapters on good agricultural practices (GAP) and organic certification procedures outlined for adoption. This would serve as a reference book for researchers, teachers and students besides farmers, traders and consumers.

Potato ranks fourth position in the world after wheat, rice and maize as non cereal food crop. Potato is probably the most popular food item in the Indian diet and India is one of the largest producers of potato. It is used in many ways like vegetable, potato wafers/chips, powder, finger chips etc. Potato tubers constitute a highly nutritious food. It provides carbohydrates, vitamin C, minerals, high quality protein and dietary fiber. Potato is a rich source of starch and it is consumed mainly for its calorific value, also contains phosphorus, calcium, iron and some vitamins. Boiling potatoes increases their protein content and almost doubles their calcium content. It is vastly consumed as a vegetable and is also used in various forms such as starch, flour, alcohol, and dextrin and livestock fodder. It is estimated that about 25 % of the potatoes, which are spoiled due to several reasons, may be saved by processing and preservation of various types of processed products. The potatoes can be processed for preservation and value addition in the form of wafers/ chips, powder, flakes, granules, canned slices. Potato granules are used for the preparation of various recipes, to add to vegetable and non vegetable recipes and to enhance the quantity as well as to enrich the food value. There is a huge potential for processed potato products such as potato flakes, potato powder, frozen potatoes, frozen French fries, potato chips/wafers are one of the most popular snack items consumed throughout world. International trade in potatoes and potato products still remains thin relative to production, as only around 6 percent of output is traded. High transport costs, including the cost of refrigeration, are major obstacles to a wider international marketplace. The industry is still growing at a rapid pace where French fries are showing the highest growth followed by potato chips and potato powder/flakes. It is by far the largest product category within snacks, with 85% of the total market revenue. This book basically deals with origin, evolution, history and spread of potato, potato products, quality requirements for processing, morphological, size and shape, defects, biochemical, dry matter, reducing sugars, phenols, inheritance, morphological attributes, tuber shape, growth cracks, hollow heart, internal rust spots, greening, biochemical attributes, glycoalkaloids, dry matter, reducing sugars, enzymic browning, development of varieties for processing, areas suitable for growing processing potatoes, processing quality of Indian potato varieties, processed potato products, dehydrated products at village level, potato chips, french fries and flakes commercial production, grading manual for frozen French fried potatoes for frozen French fried potatoes, areas of production, varieties, receiving, determining the quality and condition of raw potatoes for frying purposes, determining the quality and condition of raw potatoes for frying purposes, etc. The present book covers complete details of potato cultivation and processing in proper manner. This book is an invaluable resource for agriculture universities, students, technocrats and entrepreneurs. The book entitled "Biopesticides in Organic Farming: Recent Advances", describes critically

reviewed, key aspects of organic farming and provides a unique and timely science-based resource for researchers, teachers, extension workers, students, primary producers and others around the world. This book is intended to be a unique and indispensable resource that offers a diverse range of valuable information and perspectives on biopesticides in organic agriculture. It has chapters on each and every aspect related with biopesticides in organic farming which are compiled by researchers and eminent professors at various universities across the globe. The wide spectrum information in various chapters with the addition of the terms related to organic farming and concept statements is presented in very concise manner. Features: This book is designed, as per course curriculum of different universities offering courses on Organic Farming, for undergraduate and post graduate students, researchers, university professors and extension workers. The first section provides, Overview of organic farming with special reference to biopesticides followed by the Principles of the applications of biopesticides in organic farming, Impact of Environmental factors on biopesticides in organic farming, Pesticides Exposure Impacts on Health and Need of Biopesticides in Organic Farming, and Role of nutrients in the management of crop diseases through biopesticides. The next section deals with the management of various crop diseases through biopesticides of bacterial, fungal, viral, and Insect sex hormone, Natural enemies and Integrated Pest Management, Biotechnological Trends in Insect Pests Control Strategy, Challenges in the popularization of Biopesticides in organic farming, Certification process and standards of organic farming and Marketing and export potential of organic Products. Information presented in an accessible way for students, professors, researchers, business innovators and entrepreneurs, management professionals and practitioners.

N/A

Organic farming system in India is not new; it has been practiced for thousands of years. In the traditional organic-based food production system, the entire agriculture was practiced using organic techniques, where the pesticides, fertilizers, etc., were obtained from plant and animal products. In this book provides information on different aspects of organic production. This book focuses on modern methods of organic production, Principles, Importance, Soil fertility management, Nutrient management in, Weed management, Plant protection, Quality Control, Standards, Certification and SWOT Analysis f Organic Farming. We hope this information will be helpful to growers, whether beginners or more experienced farmers, extension workers and agricultural teachers.

This book provides attention of one and all concerned to promote organic farming as a measure to provide the elutes to posterity and to save our farm land that we inherited from our forefathers from being degraded and made in to wastelands through our excessive interventions.

Modern production technologies have proven their unsustainability. So, the pursuit for more sustainable forms of agriculture has become the urgent task for agricultural researchers and farmers. There are evidences for sustainable alternatives to conventional agriculture in several countries. They proved their capacity in resource conservation and energy usage. Organic agriculture is considered to be one of the most followed systems of alternative farming, and its approaches are found to be sustainable and safe to environment. In addition, much of the organic technologies are cheap and suitable to farmers belonging to

developing countries. However, there are many other factors which drive those farmers towards organic farming and there are some problems as well. So, it is need of the hour to analyse those factors behind their decisions and issues concerned. Further, there have been very few efforts that documented the practices, technologies and implications of organic agriculture. This book describes one such study on socio-ecological implications of organic farming, carried out in the selected districts of Tamil Nadu state in India.

Contributed articles.

Biofertilizers are seen as an important alternative technology, since the negative externalities of chemical fertilizers have become well known. The use of the latter has led to considerable environmental cost. Biofertilizers do not pollute the soil and do not disrupt the ecological balance, and hence are environment friendly. An increasing number of farmers are using biofertilizers, and the numbers of biofertilizer manufacturing units have also grown considerably. Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment. Organic farming has emerged as an important priority area globally in view of the growing demand for safe and healthy food and long term sustainability and concerns on environmental pollution associated with indiscriminate use of agrochemicals. Going organic may be a clear way of getting back to basics and getting away from the havoc chemicals can wreak on our health and our environment but the basics themselves may not be so clear. This book provides the view of immense potential of biofertilizers as a supplementary nutrient source for the crops and covers all major types of bacterial fertilizers. The major contents of this book is crop response to biofertilizers, nitrogen fixation, phosphate solubilising microorganisms, application and evaluation techniques, biogas production, pest and disease management system in agriculture, production, promotion, quality control, marketing, future research planning, photographs and details of machineries, list of manufacturers and suppliers of biofertilizers and organic farming in directory section. This book will be of use and interest to consultants, researchers, libraries, and entrepreneurs, manufacturers of biofertilizer and for those who wants to venture in to this field.

Organic Agriculture Development in India

Organic agriculture is defined as an environmentally and socially sensitive food supply system. This publication considers the contribution of organic agriculture to ecological health, international markets and local food security. It contains a number of case studies of the practical experiences of small farmers throughout the world (including India, Iran, Thailand, Uganda and Brazil) who have adopted fully integrated food systems, and analyses the prospects for a wider adoption of organic agriculture. The

book also discusses the weakness of institutional support for nurturing existing knowledge and exchange in organic agriculture.

The new edition of this annual publication (previously published solely by IFOAM and FiBL) documents recent developments in global organic agriculture. It includes contributions from representatives of the organic sector from throughout the world and provides comprehensive organic farming statistics that cover surface area under organic management, numbers of farms and specific information about commodities and land use in organic systems. The book also contains information on the global market of the burgeoning organic sector, the latest developments in organic certification, standards and regulations, and insights into current status and emerging trends for organic agriculture by continent from the world's foremost experts. For this edition, all statistical data and regional review chapters have been thoroughly updated. Completely new chapters on organic agriculture in the Pacific, on the International Task Force on Harmonization and Equivalence in Organic Agriculture and on organic aquaculture have been added. Published with IFOAM and FiBL

A rich, original study of the social and bureaucratic life of organic quality that challenges assumptions of what organic means Tracing the social and bureaucratic life of organic quality, this book yields new understandings of this fraught concept. Shaila Seshia Galvin examines certified organic agriculture in India's central Himalayas, revealing how organic is less a material property of land or its produce than a quality produced in discursive, regulatory, and affective registers. *Becoming Organic* is a nuanced account of development practice in rural India, as it has unfolded through complex relationships forged among state authorities, private corporations, and new agrarian intermediaries. Organic farming, composed of organic fertilizers as an integral virtue, continues to remain a lucrative bet for the expanding agricultural industry, in line with growing organic food appeal to consumers as a healthy and ethical choice. Beyond ethics, organic fertilizers are gaining significant traction on account of numerous environmental benefits, such as enhanced soil structure and water conservation. Growing awareness among farmers about the nutritional benefits of plant based and animal based fertilizers and their role in promoting growth of earthworm and other microbiological activities vital for plant growth are fuelling adoption of organic fertilizers. Animal based organic fertilizers are garnering significant traction over plant based variants owing to their good aeration and water retention capabilities that enhance the soil fertility. As consumers today are inclined towards clean labels and seeking transparency in everything they consume, organic has emerged as a promising approach to address these concerns. In light of these beneficial aspects of organic approaches and after gauging the futuristic opportunistic value of organic fertilizers. Increasing health issues such as diabetes, obesity and digestive disorders are also one of the factors driving the growth of the organic food. The increased accessibility of organic food and beverages in retail outlets make it more convenient for consumers to purchase these products. Asia-Pacific is also expected to rapidly increase in CAGR, owing to the changing lifestyles and increase in consumer disposable income. Organic food products and shifting consumer preference towards organic food are among the major factors expected to boost demand for organic food products in India. Growing awareness among the consumers regarding the benefits of organic fertilizers over chemical fertilizers, and increasing awareness among farmers and cultivators towards eco-friendly fertilizers. The escalating demand

for organic food products is likely to create a dire need for large scale development of organic fertilizers in the forthcoming years, which in turn will create a wide field of opportunities for stakeholders. Sensing the growing demand for organic fertilizers, market goliaths have shifted their focus on expanding their organic fertilizer produce to capitalize on the growing unmet demand from consumers. The book cover various aspects related to different organic farming and production of organic compost with their agriculture process and also provides contact details of machinery suppliers with equipment photographs and plant layout. A total guide to manufacturing and entrepreneurial success in one of today's organic farming and compost industry. This book is one-stop guide to one of the fastest growing sectors of the organic farming and compost industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of organic farming and compost. It serves up a feast of how-to information, from concept to purchasing equipment

Organic farming is a new revolution in agriculture on a global scale. This has come in wake of realization of ill effects of Green Revolution. This book has given description of adverse effects of chemicals used in agriculture and the urgent need to switch to organic farming by the use of biofertilizers and adopting biocontrol measures. Organic farming is a sustainable option where cheap and ecofriendly biofertilizers are produced by farmers and scientists using various micro organisms such as bacteria, algae and fungi. Green pest management practices using biocontrol agents for minimising the crop loss due to insect pests is extensively described in this book. The authors have also dealt with the different measures adopted in India to popularize the use of biofertilizers and biocontrol agents. The book focuses attention on present day challenge of attaining sustainable agriculture without damaging the environment. Proceedings of the first India Organic Congress and trade fair held in Bangalore, India in 2005.

Organic foods are grown naturally, meaning they are grown without the use of pesticides, artificial fertilizers and other manufactured additives. Livestock are reared without growth hormones and they are fed organic grains. Benefits of organic produce are innumerable. Organic farms are less damaging to the environment. They do not release harmful chemicals into the environment, they help sustain biodiversity rich ecosystems and they use less energy and produce less waste. Organic fruits and vegetables contain more antioxidants and have higher nutrient levels than conventional produce. Producing quality compost is the most important job on the organic farm. Organic growers greatly enhance the last part of the process by composting crop and other organic "wastes" before the soil receives them. Well-made compost is the ideal soil-food. However, opinions differ on the relative importance of organic agriculture to sustainable agriculture and on how much research, education, and extension efforts on sustainable agriculture should be directed to organic agriculture. This publication provides an introduction to organic farming, food, fertiliser and agriculture focusing on natural organic matter, biodegradable and green waste recycling. An understanding about biotic material and biomass; organic horticulture and lawn management; organic gardening and forest gardening; green agriculture, biodynamic agriculture, farming and gardening association is created. This handbook also discusses organic farming, its history and methods, and importance of crop rotation. The main motivations, principles, economics and trade related to organic agriculture and food crop production are described in detail, including the growing trade in imported organic foods and baby products. The handbook also provides readers with the required knowledge needed towards formulating sustainable organic agriculture policies

and best practices ultimately useful for building sustainable organic sectors, particularly in developing countries. The handbook also focuses on provisions in North America regarding organic farm regulation and food certification. The process of certification and standard setting of organic farming, agriculture and animal husbandry in Australia is also covered. An overview of India's national programme for organic production and its current status is also given. An overview of compost, composting process and compost technology is provided. Composting bins and systems, containers, equipment and techniques are described in brief. Home composting, composting toilet, vermin-composting and decompiculture are discussed. Elements and dimensions of organic fertiliser and eco-sanitation are described in detail. The handbook also makes a case towards adopting biological pest control and bio-pesticides. Organic certification is a certification process for producers of organic food and other products. Certification of any product acknowledges that its production has been done according to organic production standards. The production standards vary from country to country, based on their certifying bodies, but the general concept remain the same. Marketing strategies are based on the needs of the business. Planning of market strategy for organic farming in India requires a clear understanding of the present conditions of the industry. Strategies are based on selection of product, type of market, recognition of consumer needs, industry characteristics, price, marketing channels and promotional strategies. In the Indian context, the absence of a stable domestic market for organic food makes it necessary to concentrate on market confirmation/establishment. It is thereby essential to understand the present situation of the market, its preferences, competition, replacements and entry barriers among other issues. Organic farming systems have attracted increasing attention over the last one decade because they are perceived to offer some solutions to the problems currently besetting the agricultural sector. Organic farming has the potential to provide benefits in terms of environmental protection, conservation of non-renewable resources and improved food quality. India is bestowed with lot of potential to produce all varieties of organic products due to its diverse agro-climatic regions. In several parts of the country, the inherited tradition of organic farming is an added advantage. This holds promise for the organic producers to tap the market which is growing steadily in the domestic market related to the export market. In India, the land under certification is around 2.8 million ha. But, there is considerable latent interest among farmers in conversion to organic farming. However, some farmers are reluctant to convert because of the perceived high costs and risks involved in organic farming. Despite the attention which has been paid to organic farming over the last few years, very little accessible information actually exists on the costs and returns of organic farming in India. The empirical evidences of efficiency analysis of organic and conventional farming systems are scarce or even absent. So, the present paper focuses mainly on the issues like economics and efficiency of organic farming vis-à-vis conventional farming in India. Four states namely Gujarat, Maharashtra, Punjab and U.P were purposively selected for the present study. Similarly, four major crops i.e., cotton, sugarcane, paddy and wheat were chosen for comparison. A model based non-parametric Data Envelopment Analysis (DEA) was used for analyzing the efficiency of the farming systems. The crop economics results showed a mixed response. Overall, it is concluded that the unit cost of production is lower in organic farming in case of cotton and sugarcane crops where as the same is lower in conventional farming for paddy and wheat crops. The DEA efficiency analysis conducted on different crops indicated that the efficiency levels are lower in organic farming when compared to conventional farming, relative to their production frontiers. The results conclude that there is ample scope for increasing the efficiency under organic farms.

With rising population, decreasing agricultural productions and heavy use of chemicals in farming, access to fresh, safe and nutritious vegetables and fruits is getting harder by the day; especially so in urban areas. This has led to more and more people growing their own fresh

vegetables at their homes in a worldwide movement known as 'grow your own'. A number of books also have been published on urban farming, but hardly any of them for Indian conditions and context. This book is a direct response to this knowledge gap. It starts with a discussion on current food situation around the world and establishes the context for and the importance of sustainable urban agriculture. Then Prabal takes the reader through various considerations one needs to make before starting one's own food garden. These considerations are important for planning and designing one's garden and are often ignored by inexperienced gardeners leading to monumental failures. In the next section all methods starting from container and potting mix preparation to soil maintenance and pest management are discussed with clear instructions. These methods and procedures have been tailor made for urban and semi urban areas and urban life style. As a bonus section Prabal also gives ways to solve common problems in the garden with ingredients directly from the kitchen shelf. This book discusses all aspects of organic urban farming in India in a clear and direct way with plenty of pictorial references and hence is a must have for everyone who wants to or already is 'growing one's own'.

During his years as a scientist working for the British government in India, Sir Albert Howard conceived of and refined the principles of organic agriculture. Howard's *The Soil and Health* became a seminal and inspirational text in the organic movement soon after its publication in 1945. *The Soil and Health* argues that industrial agriculture, emergent in Howard's era and dominant today, disrupts the delicate balance of nature and irrevocably robs the soil of its fertility. Howard's classic treatise links the burgeoning health crises facing crops, livestock, and humanity to this radical degradation of the Earth's soil. His message—that we must respect and restore the health of the soil for the benefit of future generations—still resonates among those who are concerned about the effects of chemically enhanced agriculture.

Organic Agriculture Development in India as attempt has been made alongwith analyzing the current status of organic agriculture development in the country, also documents the experiences of all stakeholders to evolve an action plan for the future. In ten units, each covering one important aspect of organic agriculture development the book evaluates the role played by different agencies against international developments in this sector.

Organic agriculture has gained immense popularity in recent years due to the belief that it is safer and better for the environment and human health because it is inherently free of synthetic chemicals that are often harmful. Demand for organic food touched USD 81.6 billion in 2015 according to Organic Monitor, with the USA being the largest consumer of organic food products. Organic agriculture and consequently, organically cultivated animal and plant products are an important and increasingly profitable segment among food products that are sold at a premium, higher than prices for conventionally produced food. The well-heeled, highly-educated class of consumers that views itself as socially responsible and politically engaged is the largest consumer of organic food. The purchase and consumption of food labelled as 'Organic' is slowly but steadily becoming one of the means of "inconspicuous consumption" patterns that are helping the wealthy and the "nouveau riche" to distinguish itself from the rest of the society. The term 'organic agriculture' is sometimes synonymously used with 'sustainable agriculture'. Many universities across Europe and North America, have started graduate-level degree programs to teach organic/sustainable agricultural development. The author herself holds a Master's degree in Sustainable Agriculture Development - Food security for development. Organic farming and its potential for contributing in a sustainable manner (read without causing pollution) to food production has greatly won the interest of young college students across the world and this is seen as problematic by critics of organic farming. The increasing agricultural cultivation area under organic farming is subject to criticism. Critics and sceptics have rightly pointed out that farms managed organically have lower yields than those of conventional farms, are input and labour intensive and do not always help the farmer

to earn profits. Organic food has also been found to be no better than conventionally produced food in terms of nutrients or organoleptic properties. The supporters and proponents of organic farming strongly argue in favour of the environmental and health benefits offered by organic farming and organic produce. There are studies to support both sides of the argument. Many books and manuals are available in the market (either free or at a cost) to help farmers adopt organic cultivation practices. These suggestions are more or less based on the same principles and have many methods in common with conventional agriculture. However, the inputs are always of a non-synthetic nature. The organic agriculture manuals and guidebooks are always tailored to match the agro-climatic and soil conditions of the target reader audience. The manuals have systematic instructions and methods w.r.t. soil fertility management, seed/plant material procurement for cultivation, weed control, pest and disease management, organic animal husbandry and storage of harvested produce. Farmers across the globe have had a mixed bag of results trying to implement organic agricultural practices recommended for their region. This book is an attempt to honestly evaluate the practical implementation of organic farming recommendations and to see their advantages and disadvantages. The author, as an enthusiastic, young rural development worker in India, had herself tried to promote organic sugar cane production among smallholder farmers. The results were very enlightening. The most important lesson learnt was that agricultural research and subsequently extension education efforts are logistically difficult to implement and are in fact, far removed from reality. The chapter on soil fertility management considers all the possible organic options for enhancing and maintaining soil fertility. The suggestions on the use of bulky and concentrated organic manures have been studied with the point of view of actually implementing these on the farm. Green manure crops and leguminous crops have also been studied for their use in improving soil N, P and K content along with the potential advantages and disadvantages of actually including them in a crop rotation cycle. Organic farms need to supply the correct amount of macro and micronutrients to their crops for optimum growth and input-substitution i.e. the use of a proportionate amount of manures to match N, P and K supplied by chemical fertilizers, is not the correct method. Input substitution can potentially lead to ground and surface water pollution due to leaching, just like in the case of excessive synthetic fertilizer use. It can cause a serious imbalance of macronutrients in the soil as decomposition of organic manure tends to reduce certain nutrients and makes others available in concentrated amounts in the soil solution. The book also discusses the logistical and financial difficulties involved in the procurement of extremely large volumes of organic fertilizers as mandated in many organic agriculture manuals. What many individuals, including this author before attempting organic farming, often fail to take into account is that organic agriculture and conventional, industrial agriculture interdependent. Organic farms are permitted to use manures and organic wastes that originate from non-organically managed facilities. So an organic maize farm is permitted to use cow dung from a non-organically managed dairy or chicken manure from a non-organic poultry farm and hence this makes the maize farm indirectly dependent upon nutrients from synthetic sources. Organic agriculture and conventional farming are inextricably intertwined. For ensuring that organic agriculture grows in cultivation area, gains more consumers and that it is taken seriously, it should be accepted that organic and conventional farming must co-exist. The success of organic agriculture also requires the selection of seeds or planting material suited for organic cultivation practices and the chapter on seeds and planting material discusses the various options available to farmers. Most of the commercially available varieties of various crops in the market are either high-yielding, F1 hybrids or patented GMOs that are best suited to intensive chemical fertilizer usage and heavy irrigation. These varieties do not produce viable seeds that can be used in the next cropping season for sowing by the farmer. This makes farmers dependent upon corporate companies for seeds every year. It is even believed that if all GMO and high-yielding varieties were to be taken out of the market, then

farmers would be left with very few viable seed options for cultivation. The use of F1 hybrids leads to the loss of useful characteristics that may be present in indigenous, traditional varieties as these are often replaced by hybrid seeds. Both traditional and contemporary hybrid varieties have their place in the agricultural production system and both should be considered and used on organic farms as per their characteristics and utility for a farmer. This also makes a wide variety of seed choices available for organic farmers. Organic agricultural production should not be hindered due to an artificial shortage of seeds despite the availability of commercial, hybrid seeds. However, organic agriculture regulations prohibit the use of GMOs and seeds treated with chemical pesticides. Weed control in agriculture, both conventional and organic, is the most important priority for farmers. It is even said that the benefit of effective weed control for crops is comparable to the addition of fertilizers to the land. Organic agriculture does not allow the use of chemical defoliants for weed control on organic farms and this leaves farmers only with mechanical and manual weed control measures. This steeply increases the requirement for human labour and machinery use. Organic farming is hence a very difficult cultivation system to adapt in countries where agriculture is not heavily mechanized. Even in industrialized countries where heavy farm machinery use for almost all agricultural tasks is the norm, elimination of herbicide use is a difficult proposition. Synthetic herbicides are applied to farms with standing crops to free them of weed growth so as to permit harvesting combines and other harvesting machines to pass unhindered through the crop for harvesting. The chapter discusses the various options available for weed control on a farm and the advantages and disadvantages associated with their use. Organic farming is highly labour intensive and the availability of labour for carrying out weeding work and the ability to bear the extra cost greatly determines a farm's ability to adapt organic management practices. Moreover, the health problems caused by manual weeding work for labourer also have the potential to cancel out all benefits accrued through the elimination of synthetic chemical usage on farms. As herbicide usage is prohibited on organic farms, so is the use of pesticides for the control of pests. Consumers turn to organic food because it has negligible or no pesticide residues whereas many farmers opt for organic agriculture because conventional, industrial farming ruins natural resources on and near the farm. The chapter on "Biological control of insects and pests" discusses the various non-chemical options available for farmers for pest control and how the natural enemies of pests can be deployed against pests, under certain circumstances, for keeping pest populations below the threshold of economic damage. This is far easier said than done because biological control mechanisms are a slow process and take many years to establish themselves. Moreover, biological control agents such as entomopathogens and beneficial bacteria are often difficult to procure, store, transport and deploy on a farm. They also need to be protected against chemical treatments that may be carried out on neighbouring farms. Another risk that exists with the prolonged use of bioagents is the threat that they themselves might become harmful for non-target species and might even start feeding upon crop species. There have been recorded instances where insects introduced against weeds started feeding on the main crop itself. A farmer needs to take into consideration various permutations and combinations before choosing and using various bioagents on his field. However, the threat from bio agents is not as dangerous as that from the excessive and unregulated use of pesticides. Apart from plant-origin products, the customer today has also grown increasingly conscious of the quality of livestock products and the conditions under which they are manufactured owing to the various scandals involving adulteration of milk, meat and eggs with harmful synthetic substances (deliberate or otherwise) and bacterial contamination due to unhygienic production practices. People are also concerned about antibiotic overuse for rearing animals and the subsequent development of antibiotic resistance among pathogenic bacteria rendering many known drugs ineffective for treatment. There have been reports from various countries about traces of several pesticides,

insecticides, drugs and hormones being detected in animal-origin products that could prove harmful to human health to the extent of being carcinogenic. The stated concerns have prompted an increase in the number of livestock farmers shifting to organic production, both for quality concerns and to earn better premium on organic milk, meat and eggs. The chapter on organic livestock farming discusses various organic livestock and poultry farming management systems and covers issues related to health management, record keeping, breeding strategies, cost of production and input and the various problems encountered in organic breeding of livestock. Finally, any business works for profit. Organic farms are no different. For organic farming to be successful, the organic products need to be certified and marketed correctly at the optimum price point for the farmer to be able to recover his costs and to earn a decent profit. The final consumer must also be assured of actually receiving what he/she has paid a higher premium for i.e. truly organically produced goods. The prices for organic food are often very high as compared to conventionally produced food and this is expected to change once the supply of organically produced food increases and balances out the market. The market for organic food is growing at a rapid pace but the production of organic food can barely match this rate. To ensure sustainable growth of the organic food produce market, there is an urgent need to provide farmers with correct and practical advice for all aspects of organic farm management, to offer them assistance with record-keeping, certification, appropriate transportation and food-processing to avoid contamination of organic food with prohibited chemical substances, and marketing of organic produce.

Organic agriculture has grown out of the conscious efforts by inspired people to create the best possible relationship between the earth and men. After almost a century of neglect, organic agriculture is now finding place in the mainstream of development and shows great promise commercially, socially and environmentally. Integrated organic farming is a commonly and broadly used word to explain a more integrated approach to farming as compared to existing monoculture approaches. It refers to agricultural systems that integrate livestock and crop production and may sometimes be known as Integrated Bio systems. It denotes a holistic system of farming which optimizes productivity in a sustainable manner through creation of interdependent agri-eco systems where annual crop plants (e.g. wheat), perennial trees (e.g. horticulture) and animals (including fishes where relevant) are integrated on a given field or property. This concept of organic farming is based on following principles: 1. Nature is the best role model for farming, since it does not use any inputs nor demand unreasonable quantities of water. 2. The entire system is based on intimate understanding of nature's ways of replenishment. The system does not believe in mining of the soil of its nutrients and do not degrade it in any way. 3. The soil in this system is considered as a living entity 4. The soil's living population of microbes and other organisms are significant contributors to its fertility on a sustained basis and must be protected and nurtured, at all cost. 5. The total environment of the soil, from soil structure to soil cover is more important and must be preserved. Integrated Organic farming is a method of farming system, which primarily aims at cultivating the land and raising crops in such a way, so as to keep the soil alive and in good health. It is the use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials, mostly produced insitu- along with beneficial microbes (bio fertilizers) to release nutrients to crops, which connotes the 'organic' nature of organic farming. It is also termed as organic agriculture. In the Indian context it is also termed as 'Javik Krishi'. We have compiled all the relevant information regarding integrated organic farming in this book. This is first book of its kind which contains reliable details related to organic farming, green manuring, biological nitrogen fixation, uses of vermiculture bio-tech, organic fertilizers for flooded rice ecosystem, biological pest management, press mud as plant growth promoters, bio fertilizer for multipurpose tree species, rice- fish integration, response of crops to organic fertilizer and many more. The book is very useful for farmers, agriculture, universities, consultants and

research scholars.

The book "Principles of Organic Farming: Textbook" has been designed to fulfill the requirement of undergraduate students of agriculture faculty considering the syllabus of 5th Dean's committee of ICAR. This book makes an attempt to present the available information on organic agriculture in a very simple and lucid language based on the experience of the author. The book contains chapters on an introduction to organic farming, promotion of organic agriculture in India, organic ecosystems and their concepts, organic nutrients resources and their management, insect pests and disease management in organic farming, weed management in organic farming, organic crop production, certification process and standards of organic farming in India, processing and labelling of organic produce, economic viability of organic farming, marketing and export potential of organic products.

The practice of farming described as 'organic' is being promoted under many names including natural farming, biological farming, Agnihotra farming, ecological farming, homa farming etc. Organic farming offers an opportunity for smallholders to improve their production without relying on external capital and inputs and to gain premium prices using organic production methods. In India, there has been significant increase in the area under certified organic farming during the last 13 years. Presently, about 1.44 million ha area is under certified organic cultivation and India ranks 9th in terms of total land under organic cultivation. Further, India has the largest number of certified organic producers (about 0.84 million) and accounted for 1.18 million tons of certified organic produce. This book has 30 chapters and provides a comprehensive coverage of diverse topics of organic farming including history, concept and principles, nutrient management, pest management, nutritional quality of organic produce, organic livestock production management, organic processing of meat, other forms of organic farming, economics, case studies, certification, market, and policy issues. The extensive coverage of topics is complemented with suitable references, making this an essential reading particularly for students of agricultural sciences. This book will be a valuable resource for students, teachers, researchers and extension personnel interested in organic farming.

"The Organic Farming Sourcebook. Everything (almost) about organic farming in India you may want to know. Written and designed to excite and stimulate your interest in organic farming, this sourcebook will take you to every aspect of the subject..."--P. [4] of cover.

This book makes an attempt to present the available information on organic agriculture in a cogent and easily understandable manner. Though it is not exhaustive, which it is not meant to be, it is felt that book will give an overview on the subject to the interested reader. A viewpoint on organic agriculture has been presented in the book, based on the experience of the authors. The book contains chapters on organic manures (including green manures), recycling of organic wastes, vermiculture, biofertilizers, organic methods of pest and weed management, integrated nutrient management, farming systems and case studies of organic farming. Selected literature is presented for further reading. A compilation of the available information has been a felt need of students, teachers, research workers and administrators in agriculture.

[Copyright: 5a91e0127ed49a1055d0ffa98d264c2b](https://doi.org/10.1007/978-93-325-1055-0)