Innovator Hzpc Holland

Organic crop breeding: integrating organic agricultural approaches and traditional and modern plant breeding methods / Edith T. Lammerts van Bueren and James R. Myers -- Nutrient management in organic farming and consequences for direct and indirect selection strategies / Monika Messmer ... [et al.] -- Pest and disease management in organic farming: implications and inspirations for plant breeding / Thomas F. Doring ... [et al.] -- Approaches to breed for improved weed suppression in organically grown cereals / Steve P. Hoad ... [et al.] -- Breeding for genetically diverse populations: variety mixtures and evolutionary populations / Julie C. Dawson and Isabelle Goldringer -- Centralized or decentralized breeding: the potentials of participatory approaches for low-input and organic agriculture / Dominique Desclaux ... [et al.] -- Values and principles in organic farming and consequences for breeding approaches and techniques / Klaus P. Wilbois, Maaike Raaijmakers, and Edith T. Lammerts van Bueren -- Plant breeding, variety release and seed commercialisation: laws and policies applied to the organic sector / Véronique Chable ... [et al.] -- Wheat: breeding for organic farming systems / Matt Arterburn, Kevin Murphy, and Steve S. Jones -- Maize: breeding and field testing for organic farmers / Walter A. Goldstein ... [et al.] -- Rice: crop breeding using farmer led participatory plant breeding / Charito P. Mendina -- Soybean: breeding for organic farming systems / Johann Vollmann and Michelle Menken -- Faba bean: breeding for organic farming systems / Wolfgang Link and Lamiae Ghaouti -- Potato: perspectives to breed for an organic crop ideotype / Marjolein Tiemens-Hulscher, Edith. T. Lammerts van Bueren, and Ronald C.B. Hutten -- Tomato: breeding for improved disease resistance in fresh market and home garden varieties / Bernd Horneburg and James R. Myers -- Brassicas: breeding cole crops for organic agriculture / James R. Myers, Laurie McKenzie, and Roeland E. Voorrips -- Onion: breeding onions for low-input and organic agriculture / Olga E. Scholten and Thomas W. Kuyper.

The International Year of the Potato (IYP) in 2008 was a celebration of one of humanity's most important and universally loved staple foods. This end-of-year review records IYP's achievements and underscores its essential message: that the potato is a vital part of the global food system, and will play an ever greater role in strengthening world food security and alleviating poverty. This book seeks to contribute to strengthening the potato industry everywhere. It will be of particular value to developing countries that recognize the potential of the potato to drive economic development and sustain rural livelihoods. Also published in Arabic, Chinese, French, Russian and Spanish.

The stories presented in this report illustrate how improved collaboration among RTB centers is making a real difference. This includes harnessing the potential of genomics to accelerate the development of improved RTB varieties, facilitating collaborative responses to critical crop diseases and improving postharvest options. During its second year, the CGIAR Research Program on Roots, Tubers and Bananas (RTB) expanded its geographic reach and its network of partners while launching a series of collaborative initiatives aimed at resolving the most serious constraints faced by smallholder farmers growing RTB crops. While this work was initiated within a framework of seven disciplinary themes, RTB started a process to transition from an output-focused research agenda to one based on outcomes and impacts.

For thousands of years, Ethiopia has depended on its smallholding farmers to provide the bulk of its food needs. But now, such farmers find themselves under threat from environmental degradation, climate change and declining productivity. As a result, smallholder agriculture has increasingly become subsistence-oriented, with many of these farmers trapped in a cycle of poverty. Smallholders have long been marginalised by mainstream development policies, and only more recently has their crucial importance been recognised for addressing rural

poverty through agricultural reform. This collection, written by leading Ethiopian scholars, explores the scope and impact of Ethiopia's policy reforms over the past two decades on the smallholder sector. Focusing on the Lake Tana basin in northwestern Ethiopia, an area with untapped potential for growth, the contributors argue that any effective policy will need to go beyond agriculture to consider the role of health, nutrition and local food customs, as well as including increased safeguards for smallholder's land rights. They in turn show that smallholders represent a vitally overlooked component of development strategy, not only in Ethiopia but across the global South.

Quality and innovation in food chainsLessons and insights from AfricaWageningen Academic Publishers

The potato (Solanum tuberosum) is the world's fourth most important food crop after maize, rice and wheat with 377 million tonnes fresh-weight of tubers produced in 2016 from 19.2 million hectares of land, in 163 countries, giving a global average yield of 19.6 t ha-1 (http://faostat.fao.org). About 62% of production (234 million tonnes) was in Asia (191), Africa (25) and Latin America (18) as a result of steady increases in recent years, particularly in China and India. As a major food crop, the potato has an important role to play in the United Nations "2030 Agenda for Sustainable Development" which started on 1 January 2016 (http://faostat.fao.org). By 2030 the aim is to "ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round". By then, the world population is expected to reach 8.5 billion and continue to increase to 9.7 billion in 2050. For potatoes, the need is to increase production and improve nutritional value during a period of climate change, a key aspect of which will be the breeding of new cultivars for a wide range of target environments and consumers. The aim of the book is to help this endeavour by providing detailed information in three parts on both the theory and practice of potato breeding. Part I deals with the history of potato improvement and with potato genetics. Part II deals with breeding objectives, divided into improving yield, quality traits and resistance to the most important diseases and pests of potatoes. Part III deals with breeding methods: first, the use of landraces and wild relatives of potato in introgression breeding, base broadening and population improvement; second, breeding clonally propagated cultivars as a way to deliver potato improvement to farmers' fields; third, as an alternative, breeding potato cultivars for propagation through true potato seed; and fourth, gene editing and genetic transformation as ways of making further improvements to already successful and widely grown cultivars. Included are marker-assisted introgression and selection of specific alleles, genomic selection of many unspecified alleles and diploid F1 hybrid breeding.

Developments in potato chemistry, including identification and use of the functional components of potatoes, genetic improvements and modifications that increase their suitability for food and non-food applications, the use of starch chemistry in non-food industry and methods of sensory and objective measurement have led to new and important uses for this crop. Advances in Potato Chemistry and Technology presents the most current information available in one convenient resource.The expert coverage includes details on findings related to potato composition, new methods of

quality determination of potato tubers, genetic and agronomic improvements, use of specific potato cultivars and their starches, flours for specific food and non-food applications, and quality measurement methods for potato products. * Covers potato chemistry in detail, providing key understanding of the role of chemical compositions on emerging uses for specific food and non-food applications * Presents coverage of developing areas, related to potato production and processing including genetic modification of potatoes, laboratory and industry scale sophistication, and modern quality measurement techniques to help producers identify appropriate varieties based on anticipated use *Explores novel application uses of potatoes and potato by-products to help producers identify potential areas for development of potato variety and structure

History of potato processing; Structure and chemical composition of potato tuber; Potato varieties; Effect of cultural and environmental conditions on potatoes for processing; Tuber diseases; Sprout inhibition; Effect of transit and storage conditions on potatoes; The nutritive value of potatoes; Peeling potatoes for processing; Frozen french fries and other frozen potato products; Dehydrated mashed potatoes - potato granules; Potato flakes; Dehydrated diced potatoes; Potato starch; Potato flour; Canned white potatoes; Miscellaneous products from potatoes; Potatoes and potato products for livestock; Waste disposal.

Taking South Africa as an important case study of the challenges of structural transformation, the book offers a new micro-meso level framework and evidence linking country-specific and global dynamics of change, with a focus on the current challenges and opportunities faced by middle-income countries.

This paper reports on a wide-ranging review of the literature on partnerships and other closely related forms of collaboration. It aims to contribute to knowledge of the actual and potential roles of partnership in international agricultural research for development. The paper summarizes conclusions and insights from four distinct professional literatures: research studies; professional evaluation literature; practitioner-oriented reviews, guidelines and assessment tools; and CGIARrelated reviews, evaluations and policy documents. It identifies and analyzes key cross-cutting themes and success factors, highlights gaps in current knowledge, and identifies high-potential areas for further study. A wide range of research-based publications is reviewed, including studies in such fields as management and organizational development, public administration, economics and international development. Work in these fields covers such diverse topics as the role of inter-organizational collaboration in strategic management, public–private and cross-sector partnerships, North–South partnerships, roles of partnership in linking research with action, networking and transactions costs. The different literatures talk little to each other and are highly self-referential. Nevertheless, some common patterns, themes and concerns emerge related to definitions, partnership drivers and dynamics, trust and mutuality,

power asymmetries and inequities, and success factors. It is noteworthy that empirical studies of partnerships are rare, particularly in-depth case studies. Theoretical pieces seldom present empirical tests of hypotheses, and practical guidelines are seldom grounded in theory. There is a clear need for more systematic and in-depth empirical research on partnership experiences. Although partnership is now considered an essential way of working in many fields, several authors caution that the costs of working in partnership may often exceed the benefits. Before establishing a partnership, one should identify a clear value-added proposition. Many reports on partnership prepared for the CGIAR are available only in grey literature, leading to difficulties in accessing them and risking a loss of knowledge. Gaps in knowledge are identified at the level of individual partnerships, the level of the organizations that participate in or manage portfolios of partnerships, and the level of research or innovation domains that are characterized by networks of partnerships

In the past 15-20 years major discoveries have been concluded on potato biology and biotechnology. Important new tools have been developed in the area of molecular genetics, and our understanding of potato physiology has been revolutionized due to amenability of the potato to genetic transformation. This technology has impacted our understanding of the molecular basis of plant-pathogen interaction and has also opened new opportunities for the use of the potato in a variety of non-food biotechnological purposes. This book covers the potato world market as it expands further into the new millennium. Authors stress the overriding need for stable yields to eliminate human hunger and poverty, while considering solutions to enhance global production and distribution. It comprehensively describes genetics and genetic resources, plant growth and development, response to the environment, tuber quality, pests and diseases, biotechnology and crop management. Potato Biology is the most valuable reference available for all professionals involved in the potato industry, plant biologists and agronomists. Offers an understanding of the social, economic and market factors that influence production and distribution Discusses developments and useful traits in transgenic biology and genetic engineering The first reference entirely devoted to understanding new advances in potato biology and biotechnology

The present report is the outcome of the joint call on good practices on Digital Excellence in Agriculture, organized by the International Telecommunication Union (ITU) Office for Europe and Office for CIS and the Food and Agriculture Organization (FAO) of the United Nations Office for Europe and Central Asia. The document presents a summary version of the 171 eligible submissions of good practices and innovative solutions advancing the digital transformation of agriculture in Europe and Central Asia. This call complements the joint FAO-ITU review on the Status of Digital Agriculture in 18 countries of Europe and Central Asia (ITU-FAO, 2020)1 and provides evidence on how Information and Communication Technologies (ICTs) play an emerging role in the agriculture landscapes of the regions, acting as an engine for agricultural development. However, the adoption of digital technologies in agriculture differs from country to country, and from region to region. The review in the 18 countries highlighted that smallholder farmers have yet to experience the widespread benefits of this digital transformation, and they are lagging behind

when it comes to the adoption of digital agriculture solutions and innovations due to lack of trust in the potential of ICTs, limited digital skills, connectivity issues and restricted availability of ICT-based solutions to utilize and scale up. Realizing the full potential of digital agriculture transformation requires identifying, sharing and implementing best practices and proven solutions across countries, involving all actors in participatory processes.

Over the last 50 years there has been a growing appreciation of the important role that farmers play in the development and conservation of crop genetic diversity, and the contribution of that diversity to agro-ecosystem resilience and food security. This book examines policies that aim to increase the share of benefits that farmers receive when others use the crop varieties that they have developed and managed, i.e., 'farmers varieties'. In so doing, the book addresses two fundamental questions. The first question is 'how do farmer management practices – along with other factors such as environment and the breeding systems of plants – affect the evolution and maintenance of discrete farmers' varieties?' The second question is 'how can policies that depend on being able to identify discrete plant varieties accommodate the agricultural realities associated with the generation, use and maintenance of farmers' varieties?' This focus on discreteness is topical because there are no fixed, internationally recognized taxonomic or legal definitions of farmers' varieties. And that presents a challenge when developing policies that involve making specific, discrete farmers' varieties the subject of legal rights or privileges. The book includes contributions from a wide range of experts including agronomists, anthropologists, geneticists, biologists, plant breeders, lawyers, development practitioners, activists and farmers. It includes case studies from Asia, Africa, Latin America and Europe where, in response to a diversity of contributing factors, there have been efforts to develop policies that provide incentives or rewards to farmers as stewards of farmers' varieties in ways that are sensitive to the cultural, taxonomic and legal complexities involved. The book situates these initiatives in the context of the evolving discourse and definition of 'farmers' rights', presenting insights for future policy initiatives.

The book argues that an increasing corporatisation of agriculture in India that is enabled by its neoliberal State, in the name of 'development', is contributing towards deepening of inequality in the rural India. It says that Contract Farming (CF) acts as a conduit that enables the coming together of myriad production relations (mercantile, finance, productive) to sell agri-commodities to the capitalist peasant. It is an accumulation strategy that brings together various factions of domestic and foreign capital together. It shows that CF as an accumulation strategy is enabled by an active interventionist state and this neoliberal Indian state mediates the relation between the agri-capital and Indian peasantry. The book further analyzes contract farming as a part of the totality of the capitalist mode of production in context of developing countries with a large agrarian base--- asking three fundamental questions – what is CF, how and why is it done and what are the implications of it.

When a company is committed to growing through innovation - not just exploiting the existing business models - standard accounting documents offer insufficient and, oftentimes irrelevant data. Innovation Accounting is a practical guide for these companies to help them measure and track innovation. Most established organizations have understood the need to innovate and

become more digital, however the management tools available to leaders seeking to understand the investments in innovation are lacking. Financial accounting in particular is difficult to use in the context of (digital) innovation. Therefore a new complementary system for measuring and tracking innovation is needed. The book provides tools, frameworks, templates, and visualizations that can be easily understood and applied. These can all be used by executives looking for a new way of measuring corporate performance in a world where accounting-recognized assets are becoming commodities, by investors seeking better ways of looking at a company's growth potential, and by managers who need to valuate innovation product teams using more than just financial indicators. Innovation Accounting is an essential go-to book for anyone that wants to measure their company's innovation ecosystem.

There is an increasing need for an understanding of the fundamental processes involved in the mechanisms by which disease resistances are introduced into crop plants. This book provides a wide-ranging coverage of the successes and failures of the classical techniques; it describes the advances towards modern technology and addresses the problems of pathogen variation. Crop plants that are considered include: cereals (wheat, barley, rice), potatoes, vegetables and soft fruits.

Addresses the need for agriculture to feed a growing global population with a reduced environmental footprint while adapting to and mitigating the effects of changing climate. The authors expand the customary discussion of innovation in terms of supply driven R&D to focus on the returns to investors and most importantly, the value to end-users. Lessons from the book can be applied to private and public sectors by agri-business professionals, NGO leaders, agricultural and development researchers and those funding innovation and agriculture.

This book describes the historical importance of potato (Solanum tuberosum L.),potato genetic resources and stocks (including S. tuberosum group Phureja DM1-3 516 R44, a unique doubled monoploid homozygous line) used for potato genome sequencing. It also discusses strategies and tools for high-throughput sequencing, sequence assembly, annotation, analysis, repetitive sequences and genotyping-by-sequencing approaches. Potato (Solanum tuberosum L.; 2n = 4x = 48) is the fourth most important food crop of the world after rice, wheat and maize and holds great potential to ensure both food and nutritional security. It is an autotetraploid crop with complex genetics, acute inbreeding depression and a highly heterozygous nature. Further, the book examines the recent discovery of whole genome sequencing of a few wild potato species genomes, genomics in management and genetic enhancement of Solanum species, new strategies towards durable potato late blight resistance, structural analysis of resistance genes, genomics resources for abiotic stress management, as well as somatic cell genetics and modern approaches in true-potato-seed technology. The complete genome sequence provides a better understanding of potato biology, underpinning evolutionary process,

genetics, breeding and molecular efforts to improve various important traits involved in potato growth and development. Improving product quality has become essential for food chains in developing countries. Quality and innovation in food chains: lessons from Africa presents a set of case studies on food quality improvement and innovation in African food chains, with cases from South Africa, Ethiopia, Benin, Uganda and Senegal. The book is based on interdisciplinary collaborative research projects. An interdisciplinary approach leads to better insights in the opportunities and constraints for quality improvement, and helps public and private actors in seizing the opportunities and removing the constraints. This publication shows how a co-innovation perspective can be developed and applied. Co-innovation entails the combination of technical, organisational and institutional changes, the involvement of various chain actors, and the introduction of complementary innovations at different levels of the food chain. Quality and innovation in food chains: lessons from Africa is an essential read for anyone involved in studying, supporting and implementing quality improvements and innovations in food chains.

In 1936 athlete Jesse Owens won four gold medals at the Berlin Olympics and, two years later, boxer Joe Louis won a crushing victory to become heavyweight champion of the world. Despite their fame and success, both men would find themselves barred from certain hotels and would have to eat outside restaurants because of the colour of their skin. However. by their example, they gave hope to millions of black people around the world as they became the first black superstars. In Donald McRae's William Hill prize-winning dual biography, he compiles a brilliant portrait of the two men, who became close friends despite their very different career paths: within days of Olympic glory, Owens was banned from competing again, and was forced to spend his days racing against horses to earn a living before becoming a spokesman for the sporting ideal. Meanwhile Louis won and lost a fortune, eventually battling with drug addiction and mental illness. His vivid account of their lives away from the public eye, and the era in which they lived, is compelling and tragic.

The importance of haploids is well known to geneticists and plant breeders. The discovery of anther-derived haploid Datura plants in 1964 initiated great excitement in the plant breeding and genetics communities as it offered shortcuts in producing highly desirable homozygous plants. Unfortunately, the expected revolution was slow to materialise due to problems in extending methods to other species, including genotypic dependence, recalcitrance, slow development of tissue culture technologies and a lack of knowledge of the underlying processes. Recent years have witnessed great strides in the research and application of haploids in higher plants. After a lull in activities, drivers for the resurgence have been: (1) development of effective tissue culture protocols, (2) identification of genes c- trolling embryogenesis, and (3) large scale and wide spread commercial up-take in plant breeding and plant biotechnology arenas. The first major international symposium on “Haploids in Higher Plants” took place in Guelph, Canada in 1974. At that time there was much excitement about the potential benefits, but in his opening address Sir Ralph Riley offered the following words of caution: “I believe that it is quite likely that haploid research will

contr- ute cultivars to agriculture in several crops in the future. However, the more extreme claims of the enthusiasts for haploid breeding must be treated with proper caution. Plant breeding is subject from time to time to sweeping claims from ent- siastic proponents of new procedures.

Introduction: the state of rice in post-green-revolution Asia; Rice productivity growth: the case against complacency; Sustaining farm profits through technical change; Intensification-induced degradation of the paddy resource base; Erosion, pollution and poison: externalities and rice; Asian rice market: demand and supply prospects; GATT and rice: impact on the rice market and implications for research priorities; Agricultural commercialization and farmer product choices: the case of diversification out of rice; Strategic look at factor markets and the organization of agricultural production beyond 2025; Post-green-revolution seed technology for intensive rice systems; Fertilizers and pesticides: higher levels versus improved efficiencies; Dealing with labor scarcity: mechanical technologies.

Digital agriculture has the potential to contribute to a more economically, environmentally and socially sustainable agriculture and meet the agricultural goals of a country or a region more effectively, and both ICTs and agriculture are important enablers in achieving SDGs. Most stakeholders have long recognized the need for national e-agricultural strategies. Nevertheless, most of the countries have not yet implemented a national strategy for the agricultural sector's use of ICTs. ITU Offices for Europe and CIS regions in collaboration with FAO Regional Office for Europe and Central Asia developed this report on state of Digital Agriculture and Strategies developed in 18 countries. The emerging role of ICTs in Europe and CIS region is clearly observed and experienced as an engine for agricultural development, especially in view of the growing demand for reliable information and its quick access at all levels of the industry. The state of the digital agriculture ecosystem differs from country to country and is also fragmented by the regions, within the individual countries. There is an overwhelming wave of innovation in this area where a digital agriculture strategy can be helpful in finding the right path.