
Potatoes are an important crop providing a livelihood for farmers from Atlantic Canada to Chile and across the globe. James Lang’s book provides an overview of the potato crop, its origins and uses, and advances in potato technology. The emphasis of the book is on work with small farmers in developing countries, covering many examples of how well-done, applied research has a positive impact on farming communities. It is not a textbook on potato production nor will it serve as a reference for biological research. Rather it is written with the general public in mind, giving an overview of the importance of potatoes and their domestication, problems with pest management and seed production in poorer countries, and a look towards the future of potato production. The book is written in an interesting style, is very readable, and very human in its outlook. Dr. Lang acts as a knowledgeable and pleasant traveling companion, taking the reader through the history of potatoes and current challenges of potato production in the developing world. Along the way he advocates applied research in cooperation with operators of small farms. He has a talent for nicely describing the landscape without getting bogged down in too much detail and is able to make a sharp point from time to time without going into a diatribe.

The book is written in nine sections: Beginnings; The Potato; The Andean World; Potato Projects; Food and Population; Potato Diseases and Pests; Potato Seed Systems; Sweet Potatoes; Conclusions. Each of these sections is divided into several short chapters. There are several themes at work in the book. The primary theme, of course, is the cultivation and importance of the potato plant. A secondary theme is that each region has its own unique set of resources and constraints, and therefore solutions to various problems have to be individually worked out for each area. There are no cookie-cutter solutions. The grower needs to be involved in identifying problems and in evaluating solutions for the very reason that he or she understands his or her own situation best. In the context of applied research, the International Potato Center (CIP) plays a strong role in this book. A third theme is that applied research should not merely address the biology of the potato plant, but also needs to consider the whole process from commercial availability of inputs and seed to marketing and to the social and cultural aspects of potato production. Another theme, only lightly touched on, is that modern society is driven by increasingly larger urban centers of population and this may not be helpful for growers, nor may it be good for society. The author does not seem to see globalization of the world economy as a helpful thing for the poor, nor does he think that the identification of biosynthetic enzymes and the gaseous hormone ethylene enabled modulation of ethylene production and perception in transgenic plants to produce longer lasting fruits and flowers. Since progress in fundamental hormone and stress-related research fueling such technical advances has accelerated, they will be needed for the results and implications of research to reach all scientists with practical interests. But a number of recent developments pertaining to how hormones regulate plant processes, many investigators of both basic and applied research know they must revise or in some cases abandon long-held beliefs on how things work. Stresses evaluated include nutrient deficiencies, water stress, and heat. Chapters can be broadly clustered into overlapping categories. Those in one grouping provide critical analyses of research that connect new findings with earlier, historical conclusions. This grouping includes the first two chapters: I.C. Dodd’s “Do phytohormones control leaf growth of nitrogen deprived plants?” and I. C. Dodd’s “Phytohormones and temperate vegetable production: root zone temperature.” Some of the other essays have elements of the first category. More represent the grouping in which an extensive literature review is worked with varied amounts and varied levels of interpretation of newer data. Most of these offerings present a relationship between old and new applied data, but a lack of scientific progress made by more basic-oriented physiologists limits the usefulness of some interpretations.