Following Farm Practices from Field to Market


Reviewed by Katherine Reichelderfer

It's unfortunate that the title of this book will appeal to only a relatively small group of agricultural researchers involved in weed control problems. Too bad, for a broader audience could also benefit from the book's systematic, hierarchical approach to examining a specific farm management issue.

Let's look at the book first from the perspective of its smaller audience. The authors' stated intent is to provide agricultural scientists, decisionmakers, farmers, and policy officials with "a greater appreciation of the economic impact of weeds and the economic assessment of weed control strategies" (p. v) Their book is intended as a guide for anyone who wants to evaluate weed control options. Economists will find it useful, noneconomists, less so. The authors comprehensively review such agronomic phenomena as weed taxonomy, life cycles, seed dispersal, and control methods in a clear, comprehensible fashion for economists to grasp. They also outline basic economic concepts and procedures for the benefit of noneconomists who, with careful reading, could be guided to conduct their own credible economic assessment of weed control options. But, because of the rather liberal use of economic jargon, economists will probably be better informed about the agronomic features of weeds than will agronomists on the subtleties of economic analysis.

Frequent reference to a vast and comprehensive bibliography enhances the book's value. Coverage of the topic is complete. Weeds' effects on, and control in, both crop and livestock systems are thoroughly reviewed. The authors draw on others' work and develop their own empirical examples so that all the major aspects of weed economic assessment are clearly illustrated.

They have unquestionably met their own objective. Nobody who must evaluate or judge another's evaluation of an agricultural weed control option should be without this book.

But a more striking aspect of the book is that it has potential to work on an entirely different level for readers with no particular interest in weed control. The authors have organized the economic exploration of weeds in a methodical manner, tracing the implications of weed management from the smallest, simplest level—a field—to the most complex and all-encompassing level—society at large. The book could easily be used as a blueprint for the systematic evaluation of any farm management practice.

The authors first review weed control economics at the field level, under static and deterministic conditions. They are careful to note the oversimplicity of the concept of economic thresholds for weed control action and simple analytical approaches such as budgeting. Then, they introduce dynamic and stochastic elements of farm management, fortifying the basic case and introducing long-term concerns and uncertainty. The chapter on "Weeds in a Farm System" reiterates the fact that the field-level case can be regarded only as a partial analysis, and it proceeds to view weeds in the context of farm-level objectives and constraints. Interactions among components of farming systems are well illustrated, both conceptually and in a detailed empirical example. The authors' advice on using a systems approach is well founded. Next, they support the need for a regional perspective on weed control. Externalities issues and noxious weed legislation are reviewed as they relate to the potential for regional spread of weed problems. Finally, commodity price and other market effects, as well as income redistribution possibilities from widespread weed control efforts, are covered from the societal perspective. Standard welfare economics are applied to show who gains and who loses, and by how much. As a result of widespread adoption of effective weed control. Other broad issues, such as the returns to weed control research and development and pesticide regulation, are also reviewed in the societal context.

It is rare to find a single source that so thoroughly and systematically follows the economic implications of a farm practice from field to farm, farm to region, and region to market. Weed control provides a particularly
good example for such treatment because it incorporates income risk, dynamics, intrasectoral externalities, and, because of herbicide use, broad social issues. Because the book covers an area in which market failure is common, it can be used as a primer for thorough analysis of other complex classes of farm practices. Examples of current interest might include

the evaluation of agricultural biotechnology or an examination of the potential for “low-input” or “alternative” agricultural systems. I highly recommend the book to students and economists who might benefit from a clear case study on how to evaluate the effects of farm practices from their site of implementation through their implications for society.