Book review

Conservation Farming in the United States. The Methods and Accomplishments of the STEEP Program

The magnitude and extent of soil erosion in the Pacific Northwest region of the US still makes chilling reading. In a conventional farming approach in land mostly planted to winter wheat, there can be a loss of 12 bushels of topsoil, mostly from water erosion, for each bushel of wheat produced, with on-site losses of up to 1/8 in. of this highly fertile topsoil. Off-site outcomes were equally damaging with annual soil erosion in the Columbia River drainage system in 1975 resulting in about 110 million tons dumped into waterways. At about this time, the Solutions to Economic and Environmental Problems in the Pacific Northwest (STEEP) Program began. This book provides a thorough background to this soil conservation problem and the advent of the STEEP program, as well as an overview of the key components of the program, outcomes and future directions. As such, the book provides excellent reading and sources for those of us who are involved in similar conservation farming programs worldwide, as well as being generally informative to a broader audience.

The book starts with a brief history of conservation research in the Pacific Northwest and describes the region and the specific problems that developed with the introduction of farming, particularly associated with the management of frozen soil. Here, conservation farming is defined as any tillage system and planting system that leaves at least 30% of the soil surface covered with residues after the crop is planted. Successful conservation farming systems involve integrating many of the components that comprise the system. There are several chapters (4, 5, 9) that give an excellent coverage of the agronomic systems, constraints and management options used throughout this region. Information is provided on degrees of tillage, residue management and associated erosion control. It is recognised that it is difficult to measure or monitor changes in soil quality, particularly in an area with such a rich soil resource. Modelling approaches for measuring soil erosion and damages and residue decomposition are described in Chapters 3 and 4. Whilst it is known from many empirical studies within this region (described in these chapters and elsewhere) that soil erosion affects crop productivity, as yet, the models available do not link soil erosion with the effect of soil erosion on productivity. Chapter 7 describes the development of equipment used within the tillage and planting systems used in conservation farming in the Pacific Northwest. Finally, in Chapter 6, a thorough overview is given of management issues associated with changes in weeds, diseases and pests within the whole conservation farming system. Particularly useful is the detail provided here in the text tables for Integrated Pest Management strategies in the various agronomic zones.

The adoption of soil conservation practices and the often closely associated policy issues are described in Chapters 8 and 10, respectively. The background to many farmer surveys of attitudes and behaviour undertaken as part of the STEEP program, the social context and use of networks is the most valuable part of the book. Of particular interest is the discussion on how processes of information transfer will occur in the ‘information age’ as the hierarchical aspects of society.
are reduced. The description of research undertaken on issues such as commodity policy, set aside policy and land retirement is most useful, given policy change and less dependence on one or two program crops and also land return to crop use.

The chapters in the book are short and informative, and the book has a cohesiveness that would reflect the team effort of the STEEP program. Given the breath of information contained in this book and interest of the subject material, I am sure it will have a wide appeal for both agronomists and readers with an interest in environment management.

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