

AUSTRALIAN AGRICULTURE IN 2020: FROM CONSERVATION TO AUTOMATION



Edited by

Jim Pratley and John Kirkegaard

AGRONOMY AUSTRALIA

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Agronomy Australia

National Library of Australia
Cataloguing-in-publication entry

Australian Agriculture in 2020: From Conservation to Automation

Bibliography

ISBN – 13: 978-0-6485819-0-1

1. agriculture
2. conservation
3. agronomy
4. Australia

- I. Pratley, Jim
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Recommended citation

Author 1, Author 2,... (2019) Chapter title. In (Eds J Pratley and J Kirkegaard) “Australian Agriculture in 2020: From Conservation to Automation” pp xx-yy (Agronomy Australia and Charles Sturt University: Wagga Wagga)

Published on behalf of Agronomy Australia by:
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PREFACE

In the 1960s and 1970s there was much concern in the Australian community about the extent of soil degradation and erosion taking place on Australian farms from over-cultivation. At that time, reduced tillage, direct drilling and early attempts at ‘chemical farming’ were taking place. Initially the availability of Spray.Seed® was enabling reduced tillage and direct drilling to be trialled as a way of reducing the need to create a cultivated seedbed. The subsequent availability of glyphosate and the option of selective weed control using new chemicals such as diclofop methyl (Hoegrass®) facilitated the evolution of conservation farming, later to be incorporated in the broader international concept of conservation agriculture.

In 1980 the Australian Society of Agronomy, now Agronomy Australia, was formed following the first agronomy conference held at Gatton Campus, now University of Queensland. Subsequent conferences have been held approximately every two years. The 4th Conference was held in Hobart and the idea of a monograph that brought together the research on the tillage ‘revolution’ was conceived.

In 1987 Peter Cornish and Jim Pratley were asked by the Australian Society of Agronomy to produce a monograph on the ‘new agronomy’ particularly about minimum tillage and its components. That monograph, *“Tillage – new Directions in Australian Agriculture”*, was an integrator of the science and technology of the time and is still relevant 30 years later. Since that publication, however, there has been a quiet revolution which has transformed the landscape to one of soil stability from the degraded soils it replaced. But this new paradigm has not been without its own challenges, and this publication provides an integrated account of the evolution of the farming systems in the last 30 years, the new agronomy of today, and the challenges beyond 2020.

The 19th Agronomy Conference in 2019 at Wagga Wagga NSW, provides the opportunity to showcase the agronomy achievements over the last thirty years, and this monograph *“Australian Agriculture in 2020: from Conservation to Automation”* records those achievements and acknowledges the research teams and farmers who have been at the heart of agronomic progress.

We, the editors, wish to thank the more than 80 contributors without whose cooperation this publication could not have happened. A special thanks goes to John Broster and Julianne Lilley for their assistance in the final stages of preparation for publication.

We also wish to express our gratitude to Agronomy Australia for funding the project which facilitates access to the works so that Australian agronomy achievements can be widely recognised and celebrated. Finally, we acknowledge Charles Sturt University for undertaking the printing and electronic preparation needed to produce both formats of the book.

We commend the contents and the story to educators and future agronomists as the first-hand version of Australian agronomy. To other researchers it is a comprehensive account, fully referenced, to assist them to capture new opportunities for agriculture in the future, and to meet its ongoing challenges.

Thank you again to all who were involved in this journey.



Jim Pratley
Charles Sturt University



John Kirkegaard
CSIRO

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