Evaluating irrigators responses to declining groundwater supplies: a case study

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Declaration

I certify that the substance of this dissertation has not already been submitted for any degree and is not currently submitted for any other degree.

I certify that, to the best of my knowledge, any help received in preparing this dissertation, and all sources used, have been acknowledged.

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Abstract

This study examines the profitability of adopting subsurface drip irrigation and alternative activities such as horticultural crops and redclaw crayfish production by a case study irrigation farm experiencing declining groundwater supplies.

A multi-period linear programming model was developed to assess the profitability of these approaches. The model demonstrated that the use of subsurface drip irrigation and annual horticultural crops was a profitable response for the case study farm. It was also shown that a lucerne hay production activity was an integral part of the optimal farm plan across the range of groundwater supply situations examined. This is despite the high consumptive use of irrigation water by this activity.

This study provides an economic analysis of subsurface drip irrigation and redclaw crayfish production - both recent developments in Australian agriculture. In addition, economic analysis of a range of traditional and alternative field and horticultural crops for this location is provided.

Contents

List of Tables

List of Figures

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