# Chapter B11. Case study 1

## PURPOSE OF THIS CHAPTER

To give an example of a well-designed soil-management strategy

## CHAPTER CONTENTS

- case study

## ASSOCIATED CHAPTERS

- C6 ‘Case study 2’
- E3 ‘Case study 3’

## CASE STUDY 1

Andrew Rix grows 28 ha of rockmelons on red undulating sandhills outside Wentworth in south-western New South Wales. This study is of interest because the land is continually cropped with no rotation.

The soil is naturally neutral pH. A cypress pine – casuarina – eucalypt windbreak is planted on the western boundary to protect from prevailing winds.

Ryecorn is sown with MAP at 50 kg/ha in May/June. The planting bed (180 cm) is then disced and hoed in July before the melons are sown. This mulch holds the sand together.

The remaining 90-cm strips of ryecorn are used as windbreaks. These strips are slashed at 60 cm to prevent shading. The windbreak strips are then sprayed with glyphosate before crop emergence, or, in the case of the early crops, while the melons are in plastic tunnel houses (Figure B11–1).

Strip fumigation with methyl bromide is carried out in the seedbed in July using clear plastic mulch. This practice overcomes the soil-borne pests and diseases; it is currently under review.

Fertiliser and soil ameliorant or amendment practice includes the use of humic acid on the ridges at 20 L/ha to build up the cation exchange capacity and improve soil structure.

Gypsum is applied as a calcium source every second year at 2 t/ha.

Soil tests are undertaken annually, and regular leaf analysis tests are done during the growing period.

Base fertiliser is 50 kg/ha of phosphorus plus 55 kg/ha of potassium with calcium and sulfur.

Side-dressing is in the form of fertigation at 160 kg of nitrogen spread over the growing season, starting at the two-leaf stage. Potassium at 50 kg/ha is added through the irrigation system from flowering.

Depending on the leaf analyses, micronutrients such as zinc and magnesium may be added.

Irrigation is by in-line drippers spaced at 0.5 m and emitting 2 L/h. Black polythene drains are installed in the low-lying gully areas of the paddock.

The bulk stubble is disced in after the crop and holds the soil together before sowing of the new ryecorn.

Yields are consistently sustained at 30 t/ha.

**Figure B11–1.**

*Andrew Rix and NSW Agriculture District Horticulturist Gerard Kelly inspecting rockmelon seedlings on sandy soil at Wentworth under plastic mulch (top) and plastic tunnel houses for early production (below). Note the oats crop that is slashed on top and then sprayed out. The oats act as a windbreak and a soil stabiliser. (Bernie McMullen)*