

WISE WATERING

Irrigation Management

Course 2001



Presented by Davey & Maynard in association with Armstrong Agricultural Services, Hinton Agricultural Consulting, Serve-Ag, Rural Development Services and the Tasmanian Department of Primary Industries, Water & Environment.



Tasmanian Irrigation Management Course

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DEPARTMENT of
PRIMARY INDUSTRIES,
WATER and ENVIRONMENT



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An Introduction to Irrigation Management

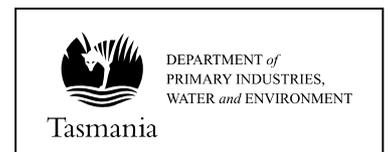
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Irrigation Management Course

These materials are part of the Wise Watering Irrigation Management Program, developed in part from the NSW Agriculture WaterWise on the farm education program and The Mallee Wells Irrigators manual.

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Course introduction

What is Wise Watering on the Farm?

This course is an education and awareness program that promotes the adoption of best irrigation management practices and technologies. Wise Watering aims to assist irrigated enterprises to:

1. improve on-farm productivity and water use efficiency,
2. improve on-farm water management,
3. improve the profitability of irrigation, and
4. adopt practices which sustain land and water resources on- and off-farm.

About the course

This Irrigation Management course aims to assist you to become a more efficient, profitable, sustainable and environmentally responsible irrigator.

The course program comprises seven modules, some designed for new or intending irrigators, and some for experienced irrigators wishing to improve on their existing knowledge and skills. Two modules are regarded as “core”, and will normally be part of every course, while the other five modules are electives that can be selected by each group.

Sessions will include practical and theory components, with as much in the field as possible. Case studies will be used to demonstrate and support the training, and mentoring will be available by telephone for some components (eg., training in the use of the Gopher).

Groups can select from the range of electives to structure a course that meets their needs and can be accommodated around a total of about 20 hours spread over 4-5 sessions each of 4-5 hours duration.

Modules	Specific topics	Delivery
1. Water resources ELECTIVE	Assessing water availability; bores, streams, dams. Water quality issues. Assessing requirements for various enterprises. Legal requirements, Water Management Act.	Presentation & discussion. 3 hours, evening.
2. Soil resources and irrigation CORE	Soil types, limitations for irrigation. Soil water issues; definitions. Soil – plant water relationships. Risks, salinity, cropping issues (soil structure).	Presentation & discussion. 2 hours evening, plus 3 hours field, day (alternatively 5 hours in one day).
3. Irrigation equipment and techniques; principles of scheduling. CORE	Techniques - manual to cover all techniques; but presentation to focus on those appropriate for the group. Assessing the performance of specific techniques - manual to cover all types; presentation to focus on those appropriate to the group. General principles & options for soil moisture monitoring and scheduling.	Presentation & discussion. 2 hours evening, plus 3 hours field, day (alternatively 5 hours in one day).
4. Use of recycled water ELECTIVE	Specific issues relevant to the use of treated waste waters, including salinity & sodicity, nutrient loads, scheduling, withholding periods & buffer zones.	Presentation & discussion. 3 hours evening.
5. Farm management & irrigation ELECTIVE	Assessment of irrigation opportunities; review the farm management implications; role of irrigation in dairy cow nutrition; will changing from one irrigation system to another pay?	Presentation & discussion. 2 hours evening, plus 3 hours field, day (alternatively 5 hours in one day).
6. Irrigation scheduling ELECTIVE	A. Tensiometers, gypsum blocks, water balance methods & ADCON. B. Specific training with the Capacitance probe (Gopher)	Presentation & discussion; 3 hours evening. 4 sessions, each 2.5 hours, with field exercises & phone contact.
7. Crop management ELECTIVE	Issues relating to the irrigation management of specific crops/pasture; with input of company field officers. How to manage competing water demands.	Presentation & discussion. 3 hours evening.

What will I learn in the course?

Depending on the modules selected, on completing the course you will be able to:

1. Assess water availability and requirements, and appreciate the legal requirements for taking and storing water for irrigation.
2. Identify the characteristics of soils and their relationship to water use, and identify the risks to the soil as a result of irrigation.
3. Evaluate the performance of an operating irrigation system.
4. Understand the special requirements for using recycled water for irrigation.
5. Develop and apply an objective method for scheduling irrigation.
6. Assess how irrigation will impact on the total operation of your farm business, or determine the feasibility of undertaking an irrigation development.
7. Apply best practice irrigation management techniques to the particular crops that you irrigate.

Assessment in the course

You may wish to have your participation in this course recognized by TAFE or by the University of Tasmania.

These two organisations have indicated that they can provide assessments and accreditation if requested, with a small fee. The assessment process will be based on individual discussions and demonstration of capability, without exams or written assignments.

Such assessments would assist if the participant wishes to claim “prior learning” for a Bachelor of Applied Science (Agric) course or either a Graduate Diploma of Agricultural Science or a Masters in Applied Science (Agric).

All participants will be provided with a Certificate of Participation.

Even if you do not complete the assessment items, you will gain from the knowledge and skills learned during the course.

Why is it important to improve irrigation management?

There are many reasons why we have to think seriously about how we use water to produce our crops and earn a living.

Some of these are the increasing competition for water, the increasing cost of water and recent changes in the allocation and use of water. As water users we must take the lead in adopting a professional approach to water use and management, documenting our claims on the resource in a creditable fashion, and pursuing excellence in the practice of irrigation and drainage.

Other reasons for improved irrigation and drainage management include:

- **You can increase your production per megalitre.**
Improved water use will grow better crops by giving them optimum soil moisture levels and reducing crop exposure to periods of waterlogging and drought.
- **You can reduce the cost of production.**
We can improve our water use efficiency through applying the right amount of water at the right time. Improved water use efficiency means reducing the amount of water which is not used by the crop, minimising system losses and reducing unnecessary pumping which all help to reduce the cost of producing a crop.
- **You can reduce pests and diseases.**
Healthier crops and increased crop productivity all add up to more dollars in our pockets. Maintaining optimum soil moisture will aid crop performance and fewer problems with maintaining the health of our crops.
- **You may end up with surplus irrigation water.**
If we improve our irrigation efficiency it may provide us with surplus irrigation water which can be used for further cropping or provide an income through sale or lease of surplus water needs. This means more dollars.
- **You can reduce impacts on the environment.**
Because we rely on water we must safeguard it from deteriorating in quality. Reducing excess irrigation minimises waterlogging, soil salinity, leaching of nutrients and chemicals, and the amount of saline groundwater seepage into our rivers and streams.
- **You will be ensuring the long-term survival of our industry.**
Improved irrigation management practices are the key to our long-term survival as an irrigation industry because the health of our rivers and land depends on best irrigation management practices.