



CRC FOR
PLANT-BASED
MANAGEMENT
OF DRYLAND
SALINITY



Salinity Update WA

September 2006

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Vale Clive Malcolm. Clive Malcolm, who passed away suddenly on Tuesday 19 September 2006, will be remembered as the founding father of saline agriculture in Australia and one of the great players in this field on the world stage. Clive joined the Western Australian Department of Agriculture and began working on salinity and the development of saline agriculture in 1954 and he continued this work for the rest of his life – 36 years in the Department and a further 16 years in an extraordinarily active retirement.

In 1990, Clive catalysed the formation of Australia's National Program on Productive Use and Rehabilitation of Saline Land (PUR\$L) which he chaired from 1990 to 1993, and which organised national workshops focusing on the use and rehabilitation of saltland. This initiative helped lay the intellectual foundation for the subsequent CRC for Plant-based Management of Dryland Salinity and the Sustainable Grazing on Saline Lands (SGSL) initiative of Australian Wool Innovation Ltd.

Harvesting dollars from saltland is the topic for a CRC Salinity WA Node meeting to be held in Perth on Wednesday 25 October. The day-long meeting will review recent CRC research findings in the morning with practical messages for land managers on increasing profits from saline land. These include updates on grazing with saltbush, raised beds and new salt-tolerant pastures and crops. After lunch a panel will assess how the information can be best used for maximum impact on WA farms, followed by a CRC update on its re-bid for a new life as the Future Farm Industries CRC.

The meeting will be at CSIRO Floreat and is free and open to all who are interested, within or outside the CRC.

- *RSVP Greg Madson on 6488 2505 by 18 October for catering*

Final written submissions to the State Administrative Tribunal (SAT) hearing on a 16 km Kulin drainage project were provided on 13 September. This is the first appeal to the SAT related to drainage and the chairman's decision (due within three months) is now awaited with great interest.

The Kulin drains were installed around May 2004 after no objections from the Commissioner of Soil and Land Conservation or land owners immediately downstream. However, about 14 months later land owners further away downstream complained that their land and farm water supplies had been affected by saline water from the drains. This resulted in a direction from the Commissioner's Office to block off the drains, at least on a temporary basis while matters could be resolved, and the appeal by the drainers to the SAT. The appeal process has been fairly drawn out, involving meetings at Kulin at the end of January, and then a hearing first scheduled for June. The hearing was then delayed until 10 August because of possible clashes with seeding, but interrupted then by the absence of expert witnesses for the drainers.

Trees, trees and more trees. Almost 25 million trees will be planted on WA farms in the next two years in a new \$64 million project under the National Action Plan for Salinity and Water Quality. The Strategic Tree-Farming Initiative is billed as the 'largest publicly-funded tree planting scheme in Australia' and the biggest project under the NAP. The Forest Products Commission, which is a core partner with the regional catchment councils, says the emphasis will be on commercial benefit in areas with lower rainfall and sandy soils. Tree species have been chosen with end products in mind such as flooring, joinery and furniture.

Four main regions will be centred around Esperance and the Mid-West (mainly maritime pine), the South West (radiata pine) and eucalypts (west, north and south of Katanning). This will ensure that most participants are within economic reach of major centres and avoid 'stranded assets'.

On-farm salinity advice back. The Geraldton office of the Department of Agriculture and Food (DAFWA) is well into farm visits as part of the new 'on-farm' Salinity Advice Service for the Northern Agricultural Region.

The project is funded by the NAP until June 2008 through the Northern Agricultural Catchments Council's (NACC) regional investment plan. Farmers not only receive advice on what management options are suitable for various salt-affected sites on their farms but are also eligible for a \$2000 per kilometre fencing incentive to assist with future management. The team uses a range of tools to aid in the decision-making including Land Monitor maps, an EM38 and water and pH testing equipment. Team leader Mike Clarke said 22 half-day farm visits had been completed by mid-September and the process would continue until mid-October (close to harvest for the lucky ones), resuming again in mid-February after holidays.

The team normally spends a week in the field and then the next back in the office completing reports to the landholders. Priority areas are the Yarra Yarra catchment, and the headwaters of the Moore and Irwin Rivers where most of the existing salinity in the region is found.

Most farmer interest has been in the Land Monitor maps and EM38 readings, sometimes revealing that seeps are not saline or diagnosing that bare patches in paddocks can have other causes besides salinity.

➤ *Jess Haselby on 9956 8532 for details and appointments*

Ramping up saltbush germination. New experiments to help improve the establishment rates of saltbush began at the end of August, through a new CRC Salinity project. Parallel trials will be done in both the glasshouse and a small field plot at Meckering with 10 different treatments involving both old man saltbush (*Atriplex nummularia*) and river saltbush (*A. amnicola*). Saltbush seed will be primed with gibberellic acid, kinetin and salicylic acid both separately and in various combinations. Germination will also be compared from naked seed and that with bracts.

Dr Ed Barrett-Lennard from the Department of Agriculture and Food said that an additional trial would also compare emergence of plants through mulches, and the ability of the mulches to maintain high temperatures and conserve water. Details have not been confirmed, but treatments are likely to involve mulches of crushed rock, sand, crushed rubber and chaff. Germination rates would be scored twice-weekly for a month then at weekly intervals concluding in mid-November.

Earlier trials indicated that gibberellic acid acts as a 'love potion' for river saltbush, while salicylic acid (old-fashioned aspirin) and kinetin may help all species. The aim will be to find a common solution that can enhance germination across all saltbushes.

Thousands of small turf grass cuttings have taken root in a University of Western Australia glasshouse as the first step to compare their performance under saline water irrigation at Wagin. This collaboration between Wagin Shire, the Department of Agriculture and Food and UWA, is funded through the Australian Research Council. It will evaluate four turfs over three years – the familiar kikuyu and three more salt-tolerant species in saltine (*Paspalum vaginatum*), NyPa grass (*Distichlis spicata*) and *Sporobolus virginicus* from Queensland. Drs Tim Colmer from UWA and Ed Barrett-Lennard from DAFWA are supervising the research which is being undertaken by PhD student Ghazi Abu Rumman from the International Centre for Biosaline Agriculture in Dubai.

In the last few weeks the drainage system has been installed, and last week (beginning 18 September) the irrigation system went in, to be followed lysimeters early the next week, and then planting. Water pumped from beneath Wagin is about two-fifths as saline as seawater and the turf growth will be compared with that from scheme water.

In a second experiment involving only saltene, salt accumulation in the root zone will be monitored at different watering rates. Saltene was chosen for its high salinity tolerance and is already known to thrive in areas irrigated with mild-to-moderately saline water. Dr Colmer said the new trial will provide extremely useful information about turf performance in the wheatbelt. The results could have widespread application on ovals and public parks in other towns besides Wagin.

➤ *Dr Tim Colmer (08) 6488 1993 or tdcolmer@cyllene.uwa.edu.au*

Perennial pastures seed shortages loom. Awareness of the value of perennial pastures appears to be growing in many parts of WA but shortage of seed could be a major impediment to its wider use in WA over the next 12 months. At a Saltland Pastures Association field walk near Cranbrook on 21 September seed merchant Neil Ballard said that seed of varieties such as puccinellia and tall wheatgrass was frequently obtained from the Eastern States, but drought was likely to reduce this sharply. Tight quarantine regulations ensuring the quality of seed imported into WA would restrict supplies even further. Mr Ballard said many WA farmers did not consider the opportunity of shutting up their paddocks for a while and then harvesting for seed, but this could be the ideal year to give it a go.

➤ *Neil Ballard on 9881 3711 or neilballard@westnet.com.au*

Saltbush ain't saltbush. For those new to saltbush, the different varieties can sometimes be confusing. To help explain the differences and their likely uses the Saltland Pastures Association (SPA) recently published a set of three SPA Notes featuring three of the most common varieties, old man, river and wavy leaf saltbush. Each A4 sheet carries coloured pictures of the featured variety and information about its likely cost, preferred sites, methods of establishment and grazing potential. Funding has come from the National Landcare Program, and copies are free or can be downloaded from the website.

➤ *Contact spa@agric.wa.gov.au or www.crcsalinity.com.au/spa*

Any comments, queries or notice of up-coming events related to salinity, don't hesitate to contact:

➤ *Georgina Wilson on (08) 6488 7353 or gwilson@fnas.uwa.edu.au*

It would be great if you would alert/remind your friends/colleagues that this edition is now available and point out that they can subscribe to a reminder of each new edition at www.crcsalinity.com.au/update

Coming events

CRC Salinity WA Node Meeting: Harvesting dollars from saltland

Wednesday 25 October, CSIRO Auditorium, Floreat
RSVP Greg Madson on 6488 2505 by 18 October for catering

EverGraze field day

Wednesday 27 September – 2 to 4pm, Wellstead
 Preliminary results from a perennial-based prime lamb production system based entirely on perennial/subclover pastures for prime lamb (>8 lambs/ha weaned) and wool.
Contact: Paul Sanford (08) 9892 8475 or psanford@agric.wa.gov.au

Avon Sandalwood Network Field Day and AGM

Tuesday 26 September – 9 am to 4 pm, Koorda
 Seven key speakers and a field trip. Supported by the Avon Catchment Council/Greening Australia WA's Native Plant Industry Project.
Contact: Tim Emmott on 9621 2400 or temmott@gawa.org.au

Ravensthorpe Agricultural Initiative Network (RAIN) Field Day

Wednesday 27 September 2006
 Owen and Terri Brownley's Property, Mt Madden (50 km north of Ravensthorpe). Presentations include Bill Roy (Challenging Herbicide Resistant Ryegrass), HF De Wet - Australian Soil Planners. Will look at the SCRIPT National Landcare Program 'Raised Bed Trials' and South East Premium Wheatgrowers Association (SEPWA) Wheat Trials.
Contact: Jenny Chambers, RAIN Office (08) 9838 1018

Brushwood industry information day

Tuesday 3 October – 10 am to 12 midday, Grass Valley Tavern
 Financial strategist, Warren Lance, will hold a special forum to discuss the commercial feasibility of building a brushwood fencing panel factory at the Avon Industrial Park.
Contact: Monica Durcan on 9291 8249 or mdurcan@iinet.net.au

AVONGRO AGM and Regional Update

Tuesday 10 October – 10 am to 12 midday, Northam Country Club.
 Find out where tree cropping is heading in the Avon. Hear about the most recent developments in tree cropping for the region as well as AVONGRO activities.
Contact: Monica Durcan on 9291 8249 or mdurcan@iinet.net.au

Workshop on developing Forest Sink projects

Week of 16 October
 The Australian Greenhouse Office will be in Northam for a full-day workshop on developing Forest Sink projects.
Contact: Monica Durcan on 9291 8249 or mdurcan@iinet.net.au

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