Northern Territory Government

NT PI Newsletter

April 2009 - Issue 1

FROM THE DIRECTOR'S DESK

I would like to welcome you to the first edition of the Plant Industries Newsletter and to introduce you to the new Division of Plant Industries within the Dept of Regional Development, Primary Industry, Fisheries & Resources (DRDPIFR).

The Plant Industries Division is an integration of Crops, Forestry & Horticulture, Plant Pathology, Entomology, Agricultural Chemistry, and the research farms at Coastal Plains, Berrimah, Katherine, Ti Tree, and Arid Zone Research Institute (AZRI) at Alice Springs.

The purpose of this newsletter is to keep all stakeholders up to date with research and development undertaken by Plant Industries.

My role at the moment is temporary until July 2009. The position will be advertised soon, and should be filled by the end of my tenure.

Not withstanding this arrangement, the Plant Industries Division exists to develop plant industries (field crops, forestry, horticulture, forage and hay) in the NT through research, development, demonstration, extension and facilitation services.

The emphasis is on sustainable development of economic, social and environment outcomes.

The Division has 73 staff in 5 locations throughout the NT, and we look forward to working with the industry on common themes.

Stuart Smith (A/Director Plant Industries Division)

FARMING SYSTEMS

Research, development and extension programs conducted on, and from the Department's Research and Demonstration Farms have led the development of primary industries in the Northern Territory over the past 45 years.

Research and Demonstration Farms provide the research facilities and infrastructure required by departmental staff and by primary industry producers, who work in partnership, to develop and implement "best farming production systems and best management practices" that underpin successful profitable and sustainable primary industries.

The beginning of the Dry Season again signals a very busy time for our staff working on the nine Research and Demonstration Farms located throughout the Northern Territory.

Mustering, processing cattle, haymaking, harvesting, and recording for the Wet Season trials, and planting the Dry Season irrigated trials are all underway, along with the usual farm maintenance activities, such as fence repairs, slashing, and installing firebreaks.

CONTENTS

The NT PI is produced by the Plant Industries Division of Department of Regional Development, Primary Industry, Fisheries and Resources (DRDPIFR).

For more information contact the Plant Industries Division Information Services on (08) 8999 2357.

This year the Research and Demonstration Farms Program has undergone some administrative changes with Berrimah Farm, Coastal Plains Research Farm, Katherine Research Station, Ti Tree Research Farm and the Arid Zone Research Institute at Alice Springs, now sitting in the newly formed, Plant Industries Division.

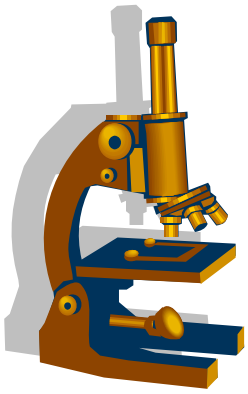
Beatrice Hill Farm, Douglas Daly Research Farm, Victoria River Research Station and Old Man Plains Research Station near Alice Springs now sit in the Pastoral Division.

However the functions of each individual research and demonstration farm has not changed, with most farms conducting both plant industry and pastoral industry projects as well as providing facilities that are utilised by other research and training organisations.

The Plant Industries Division is continuing to work closely with our plant industries producers, to develop future research and demonstration projects, with the Mango Industry Forum and follow up producer meetings the most recent example. A number of new mango research projects expected to result from the process will include further research and demonstration projects for Katherine Research Station and Coastal Plains Research Farm.

Bruce Sawyer (Director Farming Systems)

RESEARCH & DEVELOPMENT UPDATE



A group of plant pathologists and entomologists from DRDPIFR, Charles Sturt University, AQIS and the WA Dept of Agriculture recently conducted plant pest and disease diagnostic workshops in East Timor, as part of an AusAID funded project. This followed on from a workshop held by Departmental staff in Dili in February 2009. The workshops, conducted together with the East Timor Ministry of Agriculture and Fisheries, were conducted on maize, rice and tomato pests and diseases in the west and south of the country.

Over 200 agricultural extension officers and subsistence farmers were taught basic diagnostics. This is essential for them to identify the most effective control strategy – be it organic, or involving the use of pesticides. A remote diagnostic capacity was also established in Dili, allowing MAF to send photos of pests and diseases to Australia for identification (plus act as an early warning system for Australia).

The main problem there at the moment was rats in the maize eating the cobs. Travel was slow using 4 wheel drive, with Portugese policemen in Prado's being the main danger. It is intended to visit East Timor again in the next month, together with Charles Sturt University, to deliver the final part of this project and discuss possible future ACIAR / AusAID projects.

Peter Stephens (Director Research & Development)

MIKE KAHL HONOURED FOR LONG SERVICE

Mike Kahl, Senior Technical Officer at Katherine was honoured in March by the Minister of Primary Industries, Kon Vatskalis, with a certificate for 30 years of service.

Mike started in 1979 working on crop research in Katherine, working principally on Mung Bean, but also maize and sorghum with Stan Putland through the 1980s (until Stan's untimely death in 1986) and then with Stephen Yates through until the early 1990s.

Mike then worked as the senior technician on the cotton program from 1995 to 2005, which is his crowning achievement. Mike appeared on the cover of Australian Cottongrower during this time (he will show you upon request).

Mike currently works as a Senior Technical Officer for all research programs in KRS.

Mike has an extensive knowledge of both dryland and irrigated tropical agriculture, and has contributed greatly to the development of tropical agronomy in the North.

Congratulations Mike.

DELIVERING MANGO TECHNOLOGY PROJECT

DARWIN TRIALS ON NITROGEN UPTAKE AND GROWTH RESPONSE IN KENSINGTON PRIDE MANGO

Given the importance of nitrogen (N) regarding mango yield and quality, growers are keen to understand how this nutrient can be better managed.

Objectives of the work, using soil and foliar application of nitrogen in separate trials, are to estimate how much N is taken up in the tree and how the tree responds. In the case of the soil applied N trial, applying urea at different times (post-harvest & pre-flowering) to trees with a low and high N tree status will help to determine how efficiently uptake occurs and how well the trees perform. In the case of the foliar applied N trial, testing the uptake efficiency of KNO_3 and urea sprays applied at pre-flowering could quickly boost N levels in leaves when crop requirements are demanding. First year results will be available at the end of 2009 and early 2010.

A trial site has been established near Darwin on mature Kensington Pride trees. Trees with low or higher nitrogen leaf status have been selected and nitrogen will be applied at two different times: pre-flowering and post-harvest. Tree measurements of nitrogen content and tree growth response will be recorded and assessments of yield and quality parameters will be made.

The soil applied N trial has commenced with the post-harvest N application applied in December. Tree measurements are now being recorded. The pre-flowering treatment will be applied around May.

The foliar applied N trial has the site selected with background information available. Efficacy work has commenced. Treatments will consist of single and multiple applications of KNO_3 and urea. Measurements will include the uptake and quantity of N in the leaves.

These trials are part of the Delivering Mango Technology Project, a tri-state project funded by Horticulture Australia Ltd (HAL), and supported by the Australian Mango Industry Association (AMIA). DRDPIFR is participating in this Queensland led project, together with Western Australia

David Hamilton (Research Officer)

ENVIRONMENTAL MANAGEMENT IN AGRICULTURE AND THE RURAL INDUSTRIES

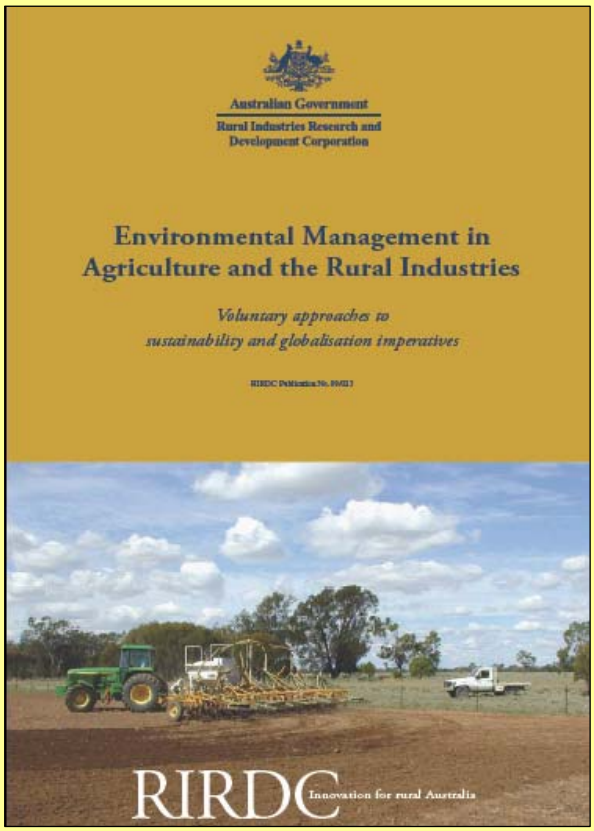
VOLUNTARY APPROACHES TO SUSTAINABILITY & GLOBALISATION IMPERATIVES

The Rural Industries Research & Development Corporation (RIRDC) has released a report on *Environmental Management in Agriculture.* This report, by Dr Thea Williams, is targeted at individual producers or groups of producers, industry bodies, retailers, public agencies and non-governmental organizations.

Environmental considerations are becoming increasingly important in how food is produced, traded internationally, marketed and sold in retail outlets. This recognition of sustainability and globalisation imperatives has, in a global context, underpinned the rising development and use of voluntary approaches to environmental management in agriculture and rural industries that are based on a diversity of environmental standards, guidelines and protocols. In a domestic context, it has driven industry and government co-investments in environmental management systems (EMS) implementation in Australian agriculture.

Click on link to view the full report - RIRDC Report

Dr Thea Williams (Industry Development Manager)



MANGO R & D FORUM REPORT RELEASED

The Northern Territory Mango Industry Association / DRDPIFR mango R & D Planning Workshop – Post workshop report has been finalised and released this week. This report has been compiled by Department of Regional Development, Primary Industry, Fisheries & Resources (DRDPIFR) and the Northern Territory Mango Industry Association (NTMIA).

Post Workshop Report

The purposes of the workshop were to provide a forum for industry and government to find ways forward on mango research and development priorities, and strategic future directions for mango R&D. It also had the aim to share information, and promote understanding on the national context of primary industries R&D. The report released clearly shows that the objectives of the workshop were achieved and gives a great documented base for further development of research and development projects.

Congratulations to Thea for putting such a comprehensive and well written document together in such a short time period. Please contact Plant Industries Information Services at email horticulture@nt.gov.au or telephone (08) 8999 2357 if you would like a copy of the report.

Stuart Smith (A/Director Plant Industries)

THE NORTHERN TERRITORY ECONOMIC INSECT REFERENCE COLLECTION (NTEIRC)

The Northern Territory Economic Insect Collection, as it is known today, was started in the early 1950s. At that time it was known as the NT Museum Insect Collection. It contains approximately 40,000 insects and other arthropod specimens. They have been acquired over many years with some specimens dating back to 1932. There are representative specimens collected from a wide variety of agricultural and horticultural crops, ornamental plants, native plants, stored products, animals and households.

In the 1950s the entomological staff made field collections of insects and also reared insects from immature stages through to the adult stage to add to the collection. They focussed on collecting a series of representative specimens of each species. It was not until 1955 that two steel entomological cabinets were purchased and delivered to the Agricultural Branch of the NT Administration for storage of specimens. Most of the insects in the collection from this period were from vegetable and fruit crops. During the 1960s there were many collections of insects from non-economic host plants in addition to those from economic crops (DPIF Annual reports 1954-1968). Many of these insects are still in the collection today. The majority of the insect specimens in the collection were collected in the 1970s from all areas of the Northern Territory. Unfortunately, most of these specimens have inadequate label data and are therefore of little use as economic specimens, although they are useful as general reference material. In the early 1990s most of the non-economic specimens in the collection were donated to the NT Museum of Arts and Sciences that was established in the early 1980s. The Collection still retains some general non-economic insect specimens although the majority are associated with the horticultural and agricultural industries (eg, dung beetles).

Today the collection is used as a reference base of pest species that occur on horticultural and agricultural crops, ornamental and native plants, stored products, animals and households. Comparison of new specimens with verified specimens in the collection is an important diagnostic tool. It also provides important records of the incidence of insects from a particular crop or situation and the type of damage they cause. These records are held in a database that forms part of the online national Australian Plant Pest Database (APPD) to which all states contribute and have access.

Haidee Brown (Snr Extension Officer)

THOUSANDS OF TREES PLANTED IN MAHOGANY TRIALS

The Wet season is the time that our forestry team works hard at planting out and conducting field research under extreme conditions. Don Reilly, head of the team, along with Peter Bergin, Nick Hartley, Doris Marcsik and Libby Doney have planted 2,500 African Mahogany trees this season on two sites with contrasting soil characteristics in the Douglas Daly area. The aim of these trials is to evaluate clonal accessions in a range of environments for growth rates, stem form and timber characteristics. "We now have clonal deployment in replicated trials with every forestry company in the Northern Territory, as well as on Coastal Plains, Douglas Daly and Katherine Research Farms. Our job now is to collect data on these trials for the next 18-20 years, which is around the expected rotation time for a full growing cycle for mahogany", Don said. "This work will be critical to the success of the industry long term".

Our Division is also in the final stages of negotiating an agreement with the University of the Sunshine Coast and other partners to conduct an African Mahogany project to minimise the time taken to select elite breeding material and the conversion of individual elite selections to high numbers of trees that can be planted. Called the Smart Forests Alliance, the three year program, when finalised, will keep us on the cutting edge of biotechnology in the forestry industry.

Stuart Smith (A/Director Plant Industries)

CITRUS SURVEY

The Department of Regional Development, Primary Industry, Fisheries & Resources (DRDPIFR) will be conducting a pro-active survey of citrus trees across the Northern Territory over the coming months read more

Citrus Survey Enquiries: (08) 8999 2287
Department Web site: www.nt.gov.au/drdpifr

Reminder – Waybills

Northern Territory Government

Waybills – PINK COPIES

Have you sent your PINK copies in to your local Stock Inspector recently?

It is a mandatory requirement for cattle, buffalo, sheep, goats, camels, deer and pig owners to complete a waybill whenever stock are moved outside the boundaries of a property.

Note: Pink copies must be sent within 28 days

Check PICs– www.primaryindustry.nt.gov.au

Darwin Region Regional Livestock Biosecurity Officer (RLBO) Ph: (08) 8999 2030 Fax: (08) 8999 2146	**Tennant Creek Region** Regional Livestock Biosecurity Officer (RLBO) Ph: (08) 8962 4490 Fax: (08) 8962 4480
Katherine Region Regional Livestock Biosecurity Officer (RLBO) Ph: (08) 8973 9754 Fax: (08) 8973 9759	**Alice Springs Region** Regional Livestock Biosecurity Officer (RLBO) Ph: (08) 8951 8125 Fax: (08) 8951 8123

DEPARTMENT OF **REGIONAL DEVELOPMENT, PRIMARY INDUSTRY, FISHERIES AND RESOURCES**

FREDS PASS SHOW

Freds Pass Show is an icon of the NT Rural Show circuit and this year is being held from 15th to 17 May at Freds Pass.

The Department and the NTHA will be sharing a site – the theme for our site this year is Biosecurity.

There will be a kids colouring competition with fantastic prizes on offer.

Come along and say hello to our friendly staff and while you are there try samples of the fruit and honey, have a look at the vegetables, flowers, and insects on display, get the children involved with an activity sheet, or source information relating to biosecurity and horticulture.

PASSIONFRUIT TRIALS

As part of an ACIAR project, researchers within the Plant Industry Division are conducting trials with Panama passionfruit across the Top End. Shortened vine life due to soil diseases has been a major impediment to sustained production. Trialling panama selections grafted on rootstocks resistant to soilborne fungi and nematodes is an important part of the project.

A passionfruit planting demonstrating "best practice" has been established at CPRS near Middle Point which is also comparing the performance of grafted and seedling plants. Other activities include:

- Regular leaf analyses to maintain the required plant nutrient levels and balance for optimum fruit yield and quality. Fertigation methodology will be developed during the project.
- Irrigation monitoring using a simple tensiometer system to maintain <30cb soil moisture tension in the root zone. Water stress can significantly reduce yield.

The highest returns for passionfruit into the Australian domestic markets are around October through November. A series of six small plantings two weeks apart from early February through to mid April have been established in an attempt to identify a planting schedule that provides fruit during that period.

A number of trial plantings have been established on collaborating growers properties around Darwin, Katherine and Kununurra. These trials will compare the performance of a number of panama seed lines and provide site specific phenology and agronomy information for those areas. These sites are also trialling grafted plants. We are working with Plant Pathology staff to conduct ongoing surveys for foliar and root pathogens across planting sites.

Very hot or wet conditions can cause poor fruit set in passionfruit. We are investigating the effect of our distinct wet and dry seasons on pollen viability and fruit set. We also suspect that panama seed lines sourced from more southern areas may not be adapted to Top End conditions resulting in poor pollination and fruit set.

With assistance from the Marketing and Communications Division we are producing some digital video clips on grafting and pollination techniques which will make excellent extension tools.

Mark Traynor (Snr Technical Officer)

GRAPEVINE LEAF RUST REPORT FINALISED

The final report: *Grapevine Leaf Rust – Incursion Risk Analysis and Improvement of PCR Diagnostics* has been finalised by Andrew Daly and Lucy Tran-Nguyen. This report, commissioned as part of work for the Grape and Wine Research and Development Corporation, expands on laboratory and field studies conducted to illustrate the possibility of windborne re-introduction to Australia of the grapevine leaf rust (GLR) pathogen, *Phakopsora euvitis*, and to develop an improved diagnostic test using polymerase chain reaction (PCR).

Some of the highlights of the research showed that it was possible for leaf rust spores to travel from East Timor to Darwin during some monsoonal conditions. This is not to say there are not other factors that influence the possibility of infection occurring, which the report details.

Research into real time PCR analysis had its difficulties, and traditional PCR was pursued, where a test was developed for the presence or absence of Grapevine leaf rust in plant leaves.

Congratulations to Andrew and Lucy on the report.

Stuart Smith (A/Director Plant Industries)

Property Identification Code (PIC)

Does your rural block / property have Livestock (Alpacas, Buffalo, Camels, Cattle, Deer, Goats, Horses, Llamas, Pigs, Poultry, Sheep)?

Is your property registered with a Property Identification Code (PIC)?

If not, you need to do so as soon as possible.
PIC Registration is free of charge – either complete PIC Registration form - www.nt.gov.au/d/nlis or contact your local Stock Inspector.

Livestock Regulations – Section 32(1) states:
The owner of an identifiable property must have a PIC registered for that property.
An identifiable property is a property that keeps any of the following livestock. Alpacas, buffalo, camels, cattle, deer, goats, horses, llamas, pigs, poultry, sheep.

Darwin Region
Regional Livestock Biosecurity Officer (RLBO)
Ph: (08) 8999 2030
Fax: (08) 8999 2146

Tennant Creek Region
Regional Livestock Biosecurity Officer (RLBO)
Ph: (08) 8962 4490
Fax: (08) 8962 4480

Katherine Region
Regional Livestock Biosecurity Officer (RLBO)
Ph: (08) 8973 9754
Fax: (08) 8973 9759

Alice Springs Region
Regional Livestock Biosecurity Officer (RLBO)
Ph: (08) 8951 8125
Fax: (08) 8951 8123

DEPARTMENT OF **REGIONAL DEVELOPMENT, PRIMARY INDUSTRY, FISHERIES AND RESOURCES**

PLANT INDUSTRIES DIVISION

INFORMATION SERVICES

Phone: (08) 8999 2357 **Fax:** (08) 8999 2049
Email: horticulture@nt.gov.au
Web: www.horticulture.nt.gov.au

More information available at the following websites:

www.nt.gov.au/d
www.nt.gov.au/d/Primary_Industry

DEPARTMENT OF **REGIONAL DEVELOPMENT, PRIMARY INDUSTRY, FISHERIES & RESOURCES**

Did you know that all of our technical notes, reports, bulletins and more can be found online at our online publications web portal www.nt.gov.au/d/publications ? All are free to search and download.