Available only as an interactive PDF
E-mailed to registered members
Available online FREE for a limited time

www.treefruit.com.au

Tree Fruit

DECEMBER 2018

Editor
Nick Morenos
B Ag Sc, Grad Dip Ed
Ph 0417 145 452

Designed & Published by
Fruit Tree Media
Box 2492
Sunbury Delivery Centre
VIC 3429 Australia
Ph 0417 145 452
Email: ftm@fruittreemedia.com.au

Advertising inquiries
Nick Morenos
Ph 0417 145 452
Email: info@treefruit.com.au

Subscription/registration
To subscribe/register:
email subs@treefruit.com.au
visit www.treefruit.com.au

Website
Current & past articles can be found at the Tree Fruit website.
www.treefruit.com.au

Frequency
Tree Fruit is published monthly

Editorial
Opinions expressed are not necessarily those of the publisher.

Advertising
The publisher accepts no responsibility for the contents of advertisements. All advertisements are accepted in good faith and the liability of advertising content is the responsibility of the advertiser.

ISSN 1447–5618

In this issue

80 years of research in the Goulburn Valley

Bas van den Ende & Judy Tisdall

Research on fruit trees began at Tatura 80 years ago. In this article we look at the early years, 1937 to 1957.

How it all began

The concept of a Horticultural Research Station was initiated in 1926, when fruit growers were concerned with poor production.

The then Superintendent of Horticulture reported that the Shepparton Irrigator's Association had asked for an experimental orchard of deciduous pome and stone fruit trees to be established in the Goulburn Valley. Ten years later this concept was realised.

From 1926 to 1929, land from Oyen to Kyabram, Tatura, Shepparton, and Katandra to Kiewa was considered. Finally in 1929, State Government approved the recommendation of the Minister of Agriculture that the property of some 40 hectares (100 acres) at Tatura be purchased for £2,800 ($5,600) payable over 20 years.

The budget for the property was not available until 1936. Between 1929 and 1936, a detailed soil survey of the property was made, and the land was leased out for wheat and grazing.

The budget allocated in the 1936–1937 financial year was £997 ($1994). It was increased the following year to £1050 ($2100). The budget allowed the property to be fenced and cultivated, and four horses, a lorry and some hand tools were purchased. Wages had to be met from this budget.

Almost all cultivation in the early years had to be undertaken by contractors, or with horse-drawn equipment borrowed from neighbours—particularly the late Arthur Pickworth of Westlands orchard who was across the road from the station.

Soil grading with a 'Harvey' box grader—July 1937.

Research began in 1937

The first orchard of 3000 trees was planted in 1937.

Research began on irrigation and soil management of Golden Queen peach trees, and on fertiliser needed for irrigated peach and pear trees.

A program of breeding and selection of canning peach varieties began in 1937 when some 4000 seedlings and trees of a few cling peach varieties were planted.

Departmental staff from Melbourne under the leadership of Colin Cole, Horticultural Research Officer, planted the trees. These were the days of the 48-hour week, and starting at 7.30 a.m. in winter following a heavy frost, was not appreciated by the staff from Melbourne who were used to a heated office at that time of the day.

The only buildings on the Station at Tatura in these early years were an old weatherboard house occupied by the foreman, a very dilapidated stable, and a small nursery shed. A front room of the house served as an office, and the sleep-out or veranda housed the manager. Lighting consisted of kerosene lamps and candles.

Water for irrigation was pumped by a windmill from the nearby Wilson Channel and water for drinking came from a small rain-water tank attached to the house.

Equipment was limited to the bare essentials, and consisted of a lorry, a single furrow mouldboard plough, a set of harrows, a Furphy water-cart and some shovels, picks, hoes and small hand-tools.

Pesticides were sprayed with a knapsack or power-pump borrowed or hired from a neighbour.

Four Clydesdale horses were used to pull field equipment.

In 1941, a secondhand Fordson tractor was transferred to Tatura from the State Viticultural Nursery in Wahgunyah.

The windbreaks around the boundaries, and between the main experimental peach and pear orchards, were a feature of the Station for over 30 years. Lambertiana cypresses, Silver and Lombardy poplars, Turkey oaks and Basket willows were the main species planted from 1937 to 1946.

The war years: 1939 to 1945

continued next month

The Australian cherry season was on track to be one of the biggest ever harvested, until Cyclone Owen spun some rain cells around the country.

Over a few days in December, isolated pockets of rain—and some very heavy downpours—fell in various parts of the country, including cherry growing regions.

Over 200 mm fell in some parts of north-east Victoria, cutting the Hume Highway and washing bridges from local roads.

Rain can cause cherries to split, and some varieties are more susceptible to rain damage than others.

Lapins in north-east Victoria stood up to nearly 200 mm of rain with no cracking.

NZ also got very wet

Cherry growers in New Zealand have also had more rain than required as their cherry season began. Some areas in the South Island had the most rain during the cherry season for ten years.

Moving water off the fruit

To minimise fruit cracking, larger orchards use the wind generated by helicopters to remove water from cherries.

Smaller growers can use airblast sprayers—not to spray the trees, but to blow water off the fruit and out of the depression where the stem connects.

Ready supply of fruit this season

Some cherry regions have almost finished harvest, others are just starting, such is the climatic variation of production areas.

It is important to point out that cherries domestically are still likely to be readily available during the festive season and well into the New Year.

Good exports to new markets

New export markets were open prior to the rain and exports were moving freely.

However, there has been some delay to the flow of export fruit as minor quality issues have crept in thanks to the rain. Harvest for export will resume as soon as the trees and the soil dry properly.

Largest every harvest?

We'll have to wait and see if this season produces the largest sweet cherry harvest in Australia.

It might be, as cherries continue to grow that extra millimetre or two in size and gain a little extra weight.

One thing is for sure, every year is different.

IPM Practitioner

This is a series of articles about practical IPM—the IPM carried out by orchardists and advisors—those of us who walk the orchard, monitor, and see what is out there; and then advise on pest, disease and weed control.

Contact Russell email: russell@insense.com.au
www.insense.com.au

Photo: Katja Schulz

GM plants may replace harmful pesticides

A team of European scientists aim to use synthetic biology to produce insect sex pheromones in plants and fungi.

Semiochemicals (pheromones) are emitted by insects for communication. The most widely known of these are sex pheromones that are used in mating disruption—a core tactic in IPM systems.

The *Susphire project* is building on the success of the Polytechnic University of Valencia's project *SexyPlant* in which they produced insect sex pheromones in plants.

Scientists have already genetically engineered a plant to produce the sex pheromones of moths and are now optimising that, as well as working on new pheromones, such as those of the mealybug that plague citrus growers.

Using plants as bio-factories

The new work uses a plant as a bio-factory, powered by the sun.

Black garden ants tending citrus mealybugs, one of the pests targeted in the new pheromone-based research.

Other researchers are also working on brewing sex pheromones using genetically modified yeast—a process already widely used to make insulin for diabetic patients.

It is well known that existing pesticides often harm pests and beneficial insects such as bees. Some are now pervasive in the environment around the world, and may be partly to blame for crashing insect populations.

The world's most widely used insecticides, neonicotinoids, were banned from outdoor use by the European Union in April.

In contrast, pheromones are specific to each species and, being used in tiny amounts in the field, do not contaminate the wider area.

GM plant releases sex pheromones

"For many species pheromone manufacturing is difficult and expensive," said Nicola Patron, at the Earlham Institute, UK.

"Bioengineering can provide viable alternatives to manufacturing and result in greater use of pheromones, which are kinder to the environment."

A pilot project called *SexyPlant* created a genetically modified tobacco plant that produces and releases the sex pheromones of the cotton bollworm and navel orange worm, both larvae of moths.

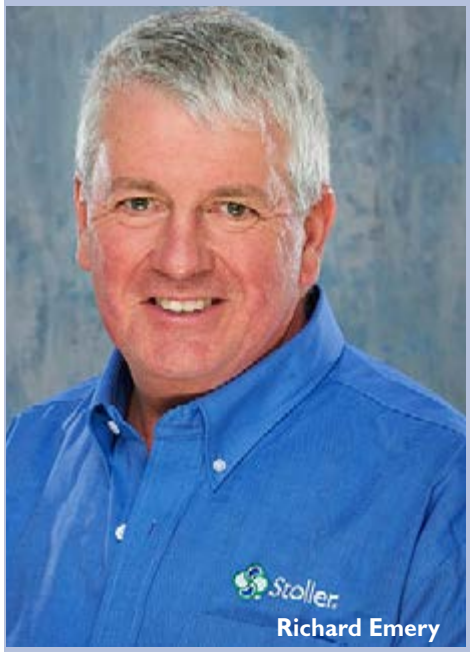
The same plant has already been engineered by others to produce Ebola antibodies and polio vaccine.

New research

In the new work, the pheromone will first be harvested from the plant and put in traps or dispensers to prevent pests mating. But in the future, plants producing the pheromones could be planted alongside the crops they protect.

continued next month

Three steps to boost post harvest treatments



General manager
Stoller Australia Pty Ltd
phone 1800 FERTILISER
mobile 0417 871 807
richard@stoller.com.au
www.stoller.com.au

Crop Nutrition

The time between fruit harvest and fresh spring flush is a good opportunity to ensure that nutrients depleted during the growing and harvesting season are replenished.

Timing is critical to maximise benefits during this dormant period. Providing nutrient 'top-ups' will assist the trees natural process of preparing for hibernation and return much needed reserves to the plant's roots and storage tissue ready for next seasons growth.

At a glance: Stoller Australia products for post-harvest nutrient replenishment

Foli-Zyme

A unique nutrient combination with Stoller's Co-Factor additives.

This proven product can enhance healthy growth, providing a foliar boost that assists your trees during its new vegetative growth period.

In addition, Foli-Zyme can assist trees to recover from stress and slow growth.

ZM² and ZM² Chelate

An essential element that will help ensure maximum yields.

One of its biggest advantages is its ability to correct crop deficiencies quickly and ensure nutrient levels are adequate before deficiencies appear.

Nutri-pHLow

This multi-nutrient product assists root growth, crop yield and quality and can be used right throughout the pre-harvest and growing period.

Postharvest 23

An ideal nutrient treatment that can be used right after harvest, providing a nutrient feed through the soil allowing a build-up of nutrient reserves and encouraging healthy spring growth as well as early growth of roots and shoots.

Sugar Mover

Used as a post harvest foliar treatment, this nutrient application restores growth balance and optimises bud and fruit development.

Its unique nutrient formula redirects carbohydrates to the roots of the plant, helping the tree withstand stress and provides a valuable food source during hibernation, when the plant needs it most.

Stoller Australia products make things as easy as 1–2–3

Stoller Australia can help you implement a post-harvest nutrient plan to ensure that growth potential is maximised.

Using a three-step strategy and Stoller's quality range of products (to bolster nutrition demands and carbohydrate reserves) ensures your trees receive the boost they need to develop strong and healthy growth year after year.

Step 1 (Foliar treatment)

Apply Foli-Zyme and ZM² before leaf-fall to enhance strong wood and bud tissue development.

Step 2 (Soil treatment)

Apply Nutri-pHLow and Post Harvest 23 to support the pre-dormancy tree root-flush that occurs after fruit harvest.

Step 3 (Hibernation treatment)

Apply Sugar Mover and ZM² to assist carbohydrate movement into buds, roots, and woody tissue.

In cases where you want to control higher vegetative growth use higher rates.

Application

Stoller Australia's range of nutrient products are available in a convenient liquid formulation and are easily applied.

Contact your Stoller representative
phone 1800 337 845 or info@stoller.com.au

Protect your crop from another hot summer

Another hot summer is on the way. Be ready with Surround.

With record temperatures and high ultraviolet radiation last summer causing damage and losses in valuable horticultural crops, it's time to start preparing for the coming onslaught of hot weather.

The Bureau of Meteorology is predicting another hot one, with the start of summer very likely to be warmer than average for most of Australia.

So now is the time to prepare your strategy and plan to use Surround® crop protectant.

A combination of high temperatures and high levels of infrared (IR) and ultraviolet (UV) light can culminate in sunburn damage and heat stress to plants. But timely applications of Surround reduces sunburn and heat stress damage, when used as per the product label.

Surround forms a white barrier coating on crops, which is specially designed to allow usable light through while blocking harmful IR and UV light.

This decreases harmful light and lowers temperatures and UV levels at the fruit surface, reducing damage without inhibiting essential photosynthetic processes.

Specially engineered kaolin clay

Natural kaolin clay that has been specially engineered using advanced Particle Film Technology is the secret to the success of Surround.

During production, heating the clay to form calcined kaolin modifies the crystals to form a highly reflective, 3-dimensional structure.

This kaolin formulation, unique to Surround, reflects radiation more effectively than hydrous kaolin and calcium carbonate.

The result is a premium formulation giving superior crop protection against damaging sunburn and heat stress.

Timing is everything

But timing is everything. Surround must be applied before the heat event.

Applications after extreme heat or even after spikes in temperature will not provide crops with adequate protection.

So be prepared this summer. Apply Surround early for maximum sun protection.

Protection you can see. Performance you can trust.

For more information contact AgNova Technologies on 03 9899 8100
www.agnova.com.au

Timely applications of Surround reduce sunburn and heat stress damage.

Apple exposed to damaging sunlight. Two circular areas protected due to spot application of Surround.

Surround forms a white barrier coating on crops, which is specially designed to allow usable light through while blocking harmful IR and UV light.

Improve packhouse productivity using virtual fruit

Compac, part of TOMRA Food, has launched the Sizer Simulator, a unique simulation tool that enables packhouses to upskill operators and prepare for incoming fresh produce.

Sizer Simulator also enables users to optimize packing efficiency by extracting maximum performance from existing equipment.

"The Sizer Simulator eliminates the risks of tweaking software on a live production run, empowering operators to experiment with settings until they've truly optimized equipment performance," said Gopi Ravi, Product Manager at Compac.

"In an industry where success depends on the ability to manage margins, this provides a unique competitive advantage."

Sizer Simulator creates a digital replica of the existing packhouse infrastructure allowing optimization of machine set-up and processes in a virtual environment.

Packhouses traditionally apply the same software parameters for each variety as they did in the previous season, fearing that altering settings may lead to inefficiencies. This prevents making continuous improvements whose cumulative value can be significant.

The Sizer Simulator tackles this head-on, allowing operators to run no-risk trials of new setups to analyze opportunities for improving yield and packing efficiency.

Sizer Simulator can use real data recorded from the sorter during previous runs. Simulator users can re-run the same 'virtualized' fresh produce as many times as they like, to assess the impact of adjustments made to the software.

Contact
marijke.bellemans@tomra.com
www.tomra.com/food

Dynamic duo for sun damage protection

Growers who target productivity, improved fruit sizing and finish, have found the combination of Screen Duo and Photon 500SG to be the ideal program over the summer months.

Two applications of Screen DUO early in the season gives leaves a reflective coating of kaolin to keep the tree cooler and reflect harmful UV rays.

A program application of Photon 500SG can then be implemented to allow ongoing heat stress mitigation without the issue of managing kaolin residue on the finished fruit.

Photon 500SG is a clear compound that leaves no residue. It triggers an enzymatic response within the plant to allow it to tolerate increased levels of abiotic stress. It is compatible with all other crop inputs so can be applied in conjunction with the normal spray program.

Unlike some kaolin products, Screen DUO is an easy-mix micro prill formulation. The micro prill is not a sharp structure and therefore will not deter predators.

Contact
Dean Smith 0407 601 717
Chris Lanz 0437 504 435

Products & Services

Latest in tree training & orchard management

Manuals written for growers to improve productivity.

Great ideas and the latest developments in tree training & orchard management.

Get your manual now

See all the manuals at www.treefruit.com.au/orchard-manuals