

Fruitwise

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NSW DEPARTMENT OF
PRIMARY INDUSTRIES

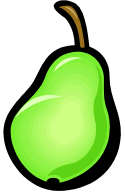


Fruit Drops

Report on water use.

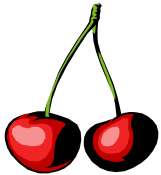
Have you ever wondered how fruit growing compares to other industries in terms of irrigation use? The ABS has released a report on their website.

<http://www.abs.gov.au/Ausstats/abs@.nsf/1020492cfc63696>

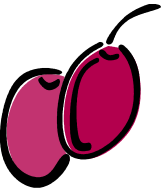


Check the date on your chemical user's certificate.

On September 1 2005 the NSW chemical training regulation came into force. This is an addition to the pesticides act, which is administered by the EPA (part of the Dept of Environment and Conservation or DEC), which means that if you use agricultural or vet chemicals in your job then you must have attended accredited training and hold a current certificate. In NSW there are two programs that meet this requirement, SMART Train and ChemCert. Certificates last for 5 years. Cost of training is tax deductible.



NSW DPI and TAFE run the **Smart Train** chemical user program, and can run courses in your area if enough people (usually 12) are interested. Initial training is 2 days. If you need to update your certificate, you can either attend a 1 day update course, or can be re-assessed at your workplace (some book exercises need to be done first, and a group of participants is preferred).



Contact the SMART Train national support centre at Yanco to find out about upcoming courses in your area. **Freecall 1800 138 351**

Spread the word!

Feel free to send a copy of Fruitwise to your friends in fruit growing.

Since the switch to electronic, the distribution list has become smaller. Also subscribers are lost when they change their email accounts. If you would like to subscribe to Fruitwise (or update your details), email the editor at julie.dart@agric.nsw.gov.au Please include your name, email address and phone number in the message, so we can ring you if we have a problem with your address in the future.

NSWDPI does not use the mailing list for any purpose other than to distribute this newsletter and we don't ever give out your details to other people.

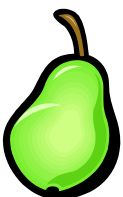
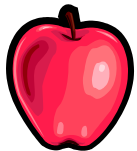
Pollination Agfacts:

Honey bees in cherry and plum pollination:

<http://www.agric.nsw.gov.au/reader/honeybees/dai126.pdf>

Honey bees in apple pollination:

<http://www.agric.nsw.gov.au/reader/honeybees/dai132.pdf>



Spotted Anything Unusual?



Australia's fruit growers have a critical role to play in protecting our orchards from exotic insects and diseases like fire blight.

It is important that you are aware of the risk, and if you spot anything unusual in your orchard you should always check it out and call the Exotic Plant Pest Hotline on 1800 084 881. This service in NSW is linked to the NSW DPI plant health diagnostics team.

The call is free (except from mobiles) and early detection will help protect your industry.

Visit www.planthealthaustralia.com.au for further information.

Packing line cleanliness is a must!

Jeremy Bright, NSW DPI Orange
Julie Dart, NSW DPI Tumut

As all growers are constantly filling out more and more paper work and becoming increasingly frustrated with all the regulations of simply growing fruit, it has become apparent that the need to abide by these regulations is an absolute must.

MRL's (Maximum Residue Levels) for marketed fruit: We have recently witnessed a glitch in the system whereby a grower failed to thoroughly flush and clean dip tanks at the end of the apple season.

The result of this oversight was that stone fruit was packaged through the same equipment later in the year. The fruit was then contaminated with residues of DPA (A chemical dip commonly used on apples, to prevent scald). Detection levels recorded were 0.62mg/kg where the MRL is 0.0mg/kg for stone fruits. The stone fruit sample was picked up at the Sydney markets as part of the Clean Fresh project (random sampling) that NSW DPI is running for the next few seasons.

The grower was made aware of this breach being an offence as it is still seen as a non label use of a pesticide even though it was not intentional. This offence carries a fine to the individual of \$60 000 and to a corporation of \$120 000.

It seems appropriate at this stage of the season to mention this scenario and alert growers that it is essential that you are aware of what is happening in all aspects of your fruit production from paddock to pack out. Trace back and accountability may mean that you will need a check list of the processes involved to insure that this situation or similar does not happen.

A good reason to be in a QA/ Food safety program: Growers who are involved in an on farm food safety scheme such as Freshcare, HACCP or SQF as grower/packers would avoid this problem if they are conducting scheduled cleaning and checks as part of the QA processes.

The key for growers is to ensure that all tanks and lines are thoroughly cleaned with the appropriate agent (check the dip chemical label and MSDS- often water is not enough) and the lines drained and then flushed with clean water. Equipment should then be prepared for storage following the manufacturer's instructions until the next packing season. Lines should be flushed again with a sanitizer before the next seasons use.

High Density Orchard Systems:

Julie Dart, NSW DPI Tumut

As part of the recent apple conference, I was able to visit an established apple orchard planted to high density systems. We visited the Sanders family property in the Yarra Valley area, just outside of Melbourne. Kevin, Peter and Bob Sanders are all responsible for the operations of the orchard. The family are members of the YV Fruits marketing group.

The Sanders have been progressively planting out new blocks at higher densities since the mid 1990's. Several spacings and systems have been used, with the most recent plantings exceeding 3 000 trees per hectare.

The Sanders family grow their own Knipp trees, to ensure that they are well feathered and of the required quality. They aim to have an "instant orchard" at planting. In the photo below Peter Sanders holds a well grown Knipp tree. There are seven feathers below Peter's hand, and all are more than 70 cm above the graft union.



Royal Gala on M26- Open V trellis

The Sanders have decided that M26 is the best dwarfing rootstock to use as the soil types grow less vigorous trees than could be expected on the volcanic soils of Batlow and Orange areas in NSW. Here M9 is too weak, and trees do not fill their canopy space quickly enough- the aim is to get trees 8ft tall in two years.

The Sanders have most of their Gala on a narrow "Open V" trellis system. The trellis-posts are angled at 17 degrees from vertical. Excess shoot growth inside the V can be a real problem if the angle gets wider (such as with the original Tatura systems). In areas on the farm with "soft" soils, cross arms hold the V together to prevent the angles becoming wider under the load of a crop.

Here the new trellis rows are spaced at 4m centres. They have tried closer spacing, but 4m suits them as it allows a tractor to be run up the rows at harvest, without disturbing the pickers too much. Safety and equipment size are the main factors when deciding on row spacing. The plantings run up and down the slopes.

Tree spacing within the rows have become closer over time, as they tried to push for earlier filling of the canopy, and thus earlier production. Kevin Sanders strongly believes that it is more of a mistake to plant trees too far apart, than too close together.



Royal Gala on M26- Planted 2002

Rows at 4m centres, trees 1.5m in each row, which gives roughly 0.75m staggered in the V. Density is 3333 trees per hectare.

Pruning: Trees are not headed when they are young, but are bent and tied down to the top wire when they are tall enough. If a tree needs to be headed to make it grow in the first year, then it is replaced with a new tree.

The Sanders follow the 3:1 ratio for trunk to branch diameter, but have further simplified this to "Wood older than 3 years goes" when it comes to winter pruning. This ensures that all wood of fruiting age is kept light. You can not afford to keep heavy, strong wood in this system. The simplified pruning system also makes it very easy to train casual workers.

Fruit Quality: Apart from achieving marketable yields earlier, the family have chosen to use the open V system because fruit of good quality is produced. In the block above, 70% of fruit packed was within the premium sizes of 60-90 count this year. Older blocks of gala on similar systems achieved up to 84% premium sizes. Any increase in yield in high density systems must also be matched with a satisfactory pack-out.

Site 2: Cripp's Pink on M26- Open V and single row.

Good results with high density systems have also been achieved with Cripp's Pink trees on M26, more than 80% of premium size fruit on V trellis using M26 rootstocks. The Sanders are experimenting with M9 on some of their Cripp's Pink blocks, where the soils are better.



Cripp's Pink on M26 (2002),
open V-trellis, High density.
3,141 trees per hectare.

Cripp's Pink on M26 (1997),
A single row block
2,500 trees per hectare



Lessons Learned:

- Trees must be well feathered. Care must be taken to transport trees without damaging feathers.
- Trees that don't meet specifications when growing must be removed quickly e.g.: nursery mix ups, out of spec sports and runts.
- The right rootstock is critical- it must be dwarfing, but have enough vigour for a tree to quickly fill its space.
- Don't be scared to plant trees closely within rows. The main benefit of adopting high density systems is an earlier return on investment. If trees don't fill their space quickly you are losing this advantage.
- Always observe the 3:1 rule when pruning. There is no good reason to grow heavy branches.
- End post design depends on the soil type- this may take some experimenting to work out the best solution.

Acknowledgements:

I would like to thank the Sanders family for hosting the Conference Orchard walk and for their willingness to share their experiences with the tour group.

What's in a "Black Box"?

From Low Chill Australia newsletter
Bill Hatton, President LCA

OLD COUNT	NEW COUNT	FRUIT DIAMETER (mm)
40	55	55-57
36	51	58-61
32	48	62-64
30	45	65-66
28	42	67-68
25	39	69-72
23	35	73-75
22	33	Count not in use
20	30	76-78
18	28	79-82
16	25	83-87
14	22	88

The following is a matrix of the new specifications for stone fruit liners at last finalised to suit the "black box". Here's how size in mm relates to both the old and new tray counts

The new counts are based on the assumption of a minimum five kilogram pack, with no exceptions. Expect some confusion as buyers try to negotiate agreed purchase prices which favour them, including the choice of paying per tray or per kg.

Any grower who was previously paid \$16 for the old count 28 tray will logically expect \$24 return on this season's "equivalent" of a 42 count, given 50% more fruit / weight should translate into 50% more dollars.

Canopy spray volumes for QFF field treatments

Bayer Information Field Day-August 2005

Phillip Wilk, NSW DPI Alstonville

Two meetings were held in two locations in NSW on Monday 8th August by Bayer Crop Science, LCA and NSW DPI to educate and confirm the correct spray usage of certain chemicals used widely in the Low Chill Stone fruit industry.

Tim O'Grady from Bayer presented information on the correct use of Lebaycid® Insecticide Spray based on tree canopy volume to determine how much product should be used to control fruit fly in stone fruit. Growers in this region have for a number of seasons been using Lebaycid for the in-field treatment of fruit fly under the Interstate Certification Assurance scheme (ICA21) for fruit being consigned to Victoria and South Australian markets.

Up to 2004, there have been no major non conformities with growers sending fruit to Victoria and South Australia. There have been a significant number of new growers entering the low chill stone fruit industry in recent years. The information day was set up to make sure that all growers understand how much chemical needs to be applied for both dilute and concentrate spraying (refer to the Orchard Plant Protection Guide for Deciduous Fruits in New South Wales 2004 / 05 for further information).

Tim O'Grady explained that estimating the volume of spray (water +chemical) to get sufficient coverage was based on spraying trees to the point of runoff. This point can be difficult to estimate as trees do not wet evenly but it can be checked using water sensitive paper. In low chill stone fruit at the full leaf canopy stage, that point using high volume is approximately 1200- 1300 Litres /ha for vase trees and 600-700 Litres/ha for palmette trained systems.

The difficulty for most low chill growers is that for ICA21 compliance, growers need to begin spraying trees 6 weeks before harvest. In many cases this may mean that there are no leaves or a minimum of leaves on their trees. The 'point of runoff' of spray at this time of the season would need a lot less spray than two weeks later when trees may be in full leaf. They would therefore need less total spray to cover the whole orchard.

Most growers unfortunately still spray their orchards to the point of runoff as though their trees are in full leaf. This in effect means that they are applying more spray than is really needed for a good coverage which may be way past the point of runoff. Often leaves lower down in the canopy receive more spray than leaves higher up.

The point of runoff can be estimated using the tree row volume method. This method treats trees as a continuous hedge of foliage and relies on the tree height, width and row width e.g.

For Dilute Spraying

Point of runoff (L/ha) = $\frac{\text{tree height (m)} \times \text{tree width (m)} \times \text{SVF} \times 10}{\text{row width (m)}}$

SVF=Spray Volume Factor (approx 75 for low chill stone fruit trees)

For an example with a **palmette trained tree**;

Tree Height = 3m

Tree width = 1m

Row width = 4m

Point of runoff = $\frac{3 \times 1 \times 75 \times 10}{4}$

= 562 Litres or for simplicity, 600 Litres/ha

The first Lebaycid spray needs to be applied 6 weeks pre harvest. The point of runoff needs to be estimated for both palmette and vase trained trees. The volume of spray at this time may only be one half of that required 2 to 4 weeks later.

If early in the season a grower uses 600 Litres to spray his/her orchard to the point of runoff as there is very little leaf, then the following calculation needs to be used to determine how much Lebaycid needs to be applied to the point of runoff.

Lebaycid® rate = 75mL /100L
Dilute volume = 600 L/ha
Amount per hectare = 450 mL/ha (6 x 75 mL / 100 L solution)

Lebaycid is not a true systemic product and is not absorbed into the plant's sap stream. It will penetrate fruit inwardly to sufficient depth to kill eggs but generally kills adults at egg laying and larvae through absorption into the epidermis. It generally relies on completely wetting fruit and it was developed as a high volume point of runoff product. It can however be used as a concentrate spray provided the rate is not greater than five times the dilute spraying rate.

For concentrate spraying

Whenever you are using *concentrate spraying* and hence using less water than the *dilute volume*, you must apply a *concentration factor (X)* for mixing as calculated below.

1. Determine the *dilute spray volume* required, for your canopy. For example 900 L/ha would be required to achieve point of run-off
2. Determine your *concentrate spray volume* for your canopy. For example 300 L/ha is the volume you intend to spray
3. For this example the concentration factor $X = 3$, (900 divided by 300)
4. So if the dilute label rate is 60 mL/100 L, then the concentrate rate becomes 180 mL/100 L of water [equals concentration factor (3) x dilute label rate 60 mL/100 L].

Note: Be careful not to use a concentrate rate higher than that specified in the label. Whether using dilute spraying or concentrate spraying both methods should apply the same total amount of product to the target crop.

A table of dilute spray volumes has been included on the next page. It will allow growers to get a quick estimate of the point of runoff with various size trees and spacings using the tree, row canopy volume method.

The information contained in this publication is based on knowledge and understanding at the time of writing (October 2005). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW DPI or the user's independent advisor.

Inclusion of an advertisement or sponsor's symbol in this publication does not necessarily imply endorsement of the product or sponsor by NSW DPI.

ALWAYS READ THE LABEL

Users of agricultural chemical products must always read the label and any Permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the Permit by reason of any statement made or omitted to be made in this publication.

General Guide ONLY to spray volumes requirements in stone fruit

		TREE HEIGHT (m)										TREE HEIGHT (m)								
		1.75	2.00	2.25	2.50	2.75	3.00					1.75	2.00	2.25	2.50	2.7	3.00			
Row Width (m)	3.0	438	500	563	625	688	750	1.0	Tree Width (m)		Row Width (m)	4.5	292	333	375	417	458	500	1.0	V
		656	750	844	938	1031	1125	1.5					438	500	563	625	688	750	1.5	
		875	1000	1125	1250	1375	1500	2.0					583	667	750	833	917	1000	2.0	
		1094	1250	1406	1563	1719	1875	2.5					729	833	938	1042	1146	1250	2.5	
		1313	1500	1688	1875	2063	2250	3.0					875	1000	1125	1250	1375	1500	3.0	
		1531	1750	1969	2188	2406	2625	3.5					1021	1167	1313	1458	1604	1750	3.5	
		1750	2000	2250	2500	2750	3000	4.0					1167	1333	1500	1667	1833	2000	4.0	
		1969	2250	2531	2813	3094	3375	4.5					1313	1500	1688	1875	2063	2250	4.5	
	3.5	375	429	482	536	589	643	1.0			5.0	263	300	338	375	413	450	1.0		
		563	643	723	804	884	964	1.5				394	450	506	563	619	675	1.5		
		750	857	964	1071	1179	1286	2.0				525	600	675	750	825	900	2.0		
		938	1071	1205	1339	1473	1607	2.5				656	750	844	938	1031	1125	2.5		
		1125	1286	1446	1607	1768	1929	3.0				788	900	1013	1125	1238	1350	3.0		
		1313	1500	1688	1875	2063	2250	3.5				919	1050	1181	1313	1444	1575	3.5		
		1500	1714	1929	2143	2357	2571	4.0				1050	1200	1350	1500	1650	1800	4.0		
		1688	1929	2170	2411	2652	2893	4.5				1181	1350	1519	1688	1856	2025	4.5		
	4.0	328	375	422	469	516	563	1.0			5.5	239	273	307	341	375	409	1.0		
		402	563	633	703	773	844	1.5				358	409	460	511	563	614	1.5		
		856	750	844	938	1031	1125	2.0				477	545	614	682	750	818	2.0		
		820	938	1055	1172	1289	1406	2.5				597	682	767	852	938	1023	2.5		
		984	1125	1266	1406	1547	1688	3.0				716	818	920	1023	1125	1227	3.0		
		1148	1313	1477	1641	1805	1969	3.5				835	955	1074	1193	1313	1432	3.5		
		1313	1500	1688	1875	2063	2250	4.0				955	1091	1227	1364	1500	1636	4.0		
		1477	1688	1898	2109	2320	2531	4.5				1074	1227	1381	1534	1688	1841	4.5		

This information is NOT a substitute for the product label. Always read and adhere to label directions. The above figures represent the volume of spray solution required to achieve the point of run off (PORO) for each planting density listed. The spray volume factor (SVF) applied to these calculations was SVF 75.

FACT SHEET

For Horticulturists and Market Gardeners

Restrictions in the use of Security Sensitive Ammonium Nitrate (SSAN)

Horticulturists and market gardeners who use fertilizers which contain ammonium nitrate may be affected by changes to Explosives legislation.

These changes, which have just come into effect under the *Explosives Regulation 2005*, reflect a tightening of Australia's security.

Here is what you need to know:

- Under the new regulations, any fertilizers containing more than 45% ammonium nitrate are designated Security Sensitive Ammonium Nitrate (SSAN), with access and use restricted.
- Horticulturists and market gardeners who use SSAN as a fertilizer must get a 'Licence to use Security Sensitive Dangerous Substances' by January 1 2006. From this date it will be illegal to be in possession of SSAN without a licence; nor will it be possible to purchase SSAN without the licence.
- All applicants for the 'Licence to use Security Sensitive Dangerous Substances' are required to undergo a security clearance check through the NSW and Commonwealth police and security agencies.
- If you use SSAN you have a responsibility to limit unauthorized access to this fertilizer. You are required to develop a Site Security Plan which describes how you control access, use and transport of the SSAN you purchase.

More detailed information and suggested templates for the Site Security Plan can be found in WorkCover's 'Guide on how to Complete a Site Security Plan (SSP) for the Agricultural Use of Security Sensitive Ammonium Nitrate (SSAN)', which is available on the WorkCover website at www.workcover.nsw.gov.au and from WorkCover offices.

- If, as the licence holder, you wish any of your employees to have unsupervised access to SSAN, the law requires that by January 1 2006 your employees must have undergone security clearance, hold an 'Unsupervised Handling Licence', and be listed on your Site Security Plan.

- When you apply for 'Licence to use Security Sensitive Dangerous Substances' you can apply to transport up to 5 tonnes of SSAN yourself as long as it is in a single direct journey. The other option is to ask your supplier to arrange 'licensed transport'.
- An indicative list of market name fertilizers containing ammonium nitrate, along with the percentage of ammonium nitrate they contain, is available on the WorkCover website at www.workcover.nsw.gov.au. Translations of this list, in ten languages, can be accessed at www.nationalsecurity.gov.au.
- Alternative products to fertilizers containing SSAN are being developed. These fertilizers will not require a licence. Ask your fertilizer supplier for details.
- The fee component for the 'Licence to use Security Sensitive Dangerous Substances' consists of \$100 for the licence and \$150 for the security clearance. The 'Unsupervised Handling Licence' costs \$150 per person. Licences are valid for five years. Renewal will include fresh security checks.
- To apply for the 'Licence to use Security Sensitive Dangerous Substances' you need Form FE02 for an individual or Form FE03 for a company, and for the 'Unsupervised Handling Licence', Form FE01. All are available from WorkCover.
- Licence application forms and supporting documentation such as proof of identity should be submitted at Australia Post, together with payment of the appropriate licence and security clearance fees.
- For further information on restrictions in the use of SSAN, check the WorkCover website at www.workcover.nsw.gov.au or contact your local WorkCover office.