



dairynews

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Fertiliser – make the most of it

Neil Griffiths, Acting Technical Specialist
Pastures, Tocal



Photo: Nitrogen topdress trials conducted at Tocal in 2009 and 2010

Fertilisers are one of the biggest costs of producing pastures and crops on dairy farms. Regular reviews of their use should ensure adequate fertiliser is applied to achieve production targets while ensuring that money is not being wasted on unnecessary inputs. Sometimes cutting back on essential soil nutrients will cost more than it saves if it means less grass is grown.

Nitrogen - is the fertiliser needed most on NSW farms

A recent Dairy Australia survey showed that urea use in the Dairy NSW area was well below other states. This may be because we grow more legumes, although that is unlikely because the amount of lucerne grown on most dairies is less than 15 years ago. Poultry litter supplies nitrogen on some farms but not enough to make up the difference so it probably means that it would be easy to produce more grass simply by using more nitrogen.

Grass will not grow without nitrogen, it is essential for plant protein. In fact every tonne of dry matter at 18% crude protein (this would be most green leafy ryegrass, kikuyu or lucerne) contains about 30 kg N. This N must come from somewhere otherwise you will see no growth; and in grass pastures or crops N is often the nutrient most limiting growth.

When used well nitrogen can be quite profitable. Nitrogen trials done on ryegrass at Tocal in 2009 averaged 20kg of extra dry matter per kg N applied. This could then in turn produce between 20 and 40 litres of extra milk per kg of N. You can apply current prices to work out if this would be profitable.

To achieve good growth from nitrogen other nutrients must be adequate, soil moisture must be good, pasture density must be good, no major weeds present, and temperatures suitable for the pasture being grown. Growth response will be slower on cold, short days in winter and nothing likes heat wave conditions in summer. Topdress good responsive paddocks and then ensure grazing management is right, that is 3 leaves on ryegrass.



Primary
Industries



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EDITORIAL



Kerry Kempton

Technical Specialist
Dairy, Tocal

When milk prices drop the natural reaction is to tighten up on spending and look to where cost savings can be made. The crucial thing is knowing where to cut, as reducing inputs may also reduce outputs to a more significant degree, resulting in a worse result overall. The first step towards cost control is knowing exactly what your production costs are, and how well the farm business is using the resources available.

In this edition of Dairy News, we've chosen to focus on the most vital of dairy farm profit drivers – production and consumption of home grown feed. The past few years have seen good seasons and relatively high milk prices across most of NSW. This has promoted good pasture growth (except perhaps where floods have ruined paddocks of feed) with plenty of surplus for silage or hay. Combined with relatively low grain prices, it may have been easier to take your eye off the ball on managing feed costs than in the dry years.

With electricity prices rising, and fuel and fertiliser costs significant, many farmers may be questioning their feed production systems and looking to make savings. But these inputs are a key part of growing and utilising home grown fodder, and are not the first place to look for cost cutting. There are several articles from our DPI Agronomy team on the benefits from dollars invested in fertiliser, particularly nitrogen, and in silage making and irrigation.

It is these small decisions around timing and the attention to detail with pasture and herd management, that make the difference between making a profit or not.

NSW DPI is working together with the Rural Financial Counselling Service (RFCS) and Dairy Australia on the Tactics for Tight Times campaign. This campaign aims to help farmers and service providers determine the most suitable management decisions in response to the downturn in milk prices. Whilst we can't influence what farmers receive for their milk, we can provide information and support to make the best decisions in the circumstances.

During the past two months, we have assisted a number of farmers with business analysis, income and cashflow predictions, and management strategies to adjust to changing contract arrangements. The RFCS have also been assisting farmers with debt management and business planning, and with accessing income support from the federal government where certain criteria are met. If you require assistance with business management, I suggest you contact one of our team listed on the back page.

I have also included an article from John Mulvany from Onfarm Consulting, based in Gippsland, on Riding the Rollercoaster that is the dairy industry. John delivered this information to farmers in Victoria last year, and I believe his insights around ensuring your business is built on solid foundation is just as relevant to farmers in NSW.

Remember, every downturn is usually followed by a recovery period and upswing. The hard part is predicting the timing of the cycle.

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Urea is still the most cost effective type of nitrogen fertiliser for topdressing. Some farmers are using sulphate of ammonia (SoA) which has several trade names. This is an option if soils are known to be deficient in sulphur, BUT 2 or 3 applications of SoA per year should apply plenty of sulphur. SoA is very acidifying on soil, so you would need to use lime more frequently. SoA is more expensive per kg for N than urea if all you need is nitrogen.

Liquid nitrogen through the irrigation system can be convenient and effective provided the basic conditions mentioned above are met and the correct rate applied. Liquids are more expensive per kg of N than urea so savings in application efficiency are needed to make it worthwhile.

Nitrogen fertiliser can be very effective. In a long term trial at Tocal on a soil which was adequate or high in pH and all other nutrients, urea is the only fertiliser used for the last 7 years. The pastures are producing more than 20 tonnes DM /ha /year in most years. The urea is applied at 100kg/ha every month when pasture is growing. Application of N has varied depending upon seasonal conditions. In some years urea was applied over 7 months due to dry weather or failure to over sow ryegrass into kikuyu, and in some years urea was applied every month. We are soil testing every year and know that we will need to apply lime to maintain adequate pH, and potassium, sulphur and phosphorus will be needed in future but for now all are adequate.

Can you use reserves of Phosphorus & Potassium?

Peter Beale

District Agronomist, Taree

Recent soils tests done through NSW DPI Soil Testing service on the mid North Coast across a number of dairy farms have shown that many dairy pastures have an adequate pH and phosphorus and would grow pasture for some years without extra lime or "super". Testing carried out in the Hunter Valley showed that potassium and sulphur were more variable and this highlighted the need to soil test to help ensure the right decisions are made.

This is consistent with Incitec Pivot soil tests results from 2007 to 2012, which showed two thirds of paddocks tested had more than adequate P. For potassium around half had more than adequate K. For sulfur only 20% were below ideal.

Higher soil fertility is usually found in those paddocks close to the dairy used for night paddocks, effluent reuse and silage feedout areas.

Typically, low soil fertility occurs in long term silage paddocks, high producing paddocks with high rate of nutrient removal and paddocks furthest away from the dairy where cows are not in the paddock as long.

It is important to keep fertilising new areas and those with low soil tests as production will fall quickly on these areas without it.

Also on irrigated paddocks, water will be wasted if there are not sufficient nutrients for good pasture growth.

The key message to the farm business is the importance of soil testing, done regularly with an accredited soil testing laboratory. Don't rely on old soil tests, or guesswork to decide if you need fertiliser. Soils tests will show whether you have high residuals of P and K. You can then decide whether you can reduce fertiliser.

Irrigating dairy pastures – does it pay?

Hayden Kingston, District Agronomist

Dave O'Donnell, Irrigation/Soils officer, NSW DPI, Bega

Peter Smith, Irrigation Officer, Tamworth



Photo: Rick Jennings, Technical Assistant Bega monitoring soil moisture

After a couple of wetter seasons, most regions in NSW have had very little rain in August and September 2012. Our soil moisture loggers in the Bega region were showing that soils have dried down to levels that now limit pasture growth. Plenty of farmers have started up irrigation systems that may have not been used for some time.

A Brogo River dairy farmer recently asked us if we have re-considered the economics of irrigating, given recent increases in pumping costs and water charges. Is it worth putting the pump back in the river?

The cost of irrigation on every farm depends enormously on the pump and irrigation systems in place, so irrigation decisions may be different to those of neighbouring properties.

The key is to work out the cost of delivering irrigation water on your property, then estimate how much feed you can grow with that water and compare this with the cost of alternative feed sources on your farm.

What does it cost you to irrigate?

The farmer quoted a cost of \$200 per day to pump two megalitres of water and water charges of \$35/ML. On top of this are the labour and other costs to run the irrigation system.

Considering pastures in the district require around 7 ML of irrigation per hectare the overall irrigation costs could be up around \$1000 per hectare annually. This grows 1.2 tonnes of DM per ML, that means the feed is costing around \$150 per tonne DM. If you can grow even more feed in the spring from each ML the cost drops.

In another example a farmer and his consultant worked out last season's feed costs and calculated the cost of grass harvested from irrigation was about \$125 per tonne of dry matter. Given that last year was reasonably wet he also estimated that the cost in a dry year would be closer to \$210 per tonne.

What can you grow with the water?

NSW DPI / Sydney University supervised research work conducted at Camden as a component of James Neal's PhD, to demonstrate the impacts of less than optimal irrigation practices during summer for a range of our common pasture species.

The table on the next page shows how much dry matter was grown at different irrigation levels. If you look at perennial ryegrass water use efficiency, 12 kg DM/mm/ha is the equivalent of 1.2 tonnes of dry matter per ML of irrigation water. Given that spring is the most efficient time of year for growing temperate grasses like ryegrass I would expect the response to be greater at this time of year.

The sub tropical crops and pastures maize and kikuyu are generally much more efficient at turning water into dry matter, this efficiency is important if you are considering strategic use of irrigation at certain times of the year or on crops to maximise returns per ML.

	Maize		Kikuyu		Perennial Ryegrass	
	Yield T/DM/ha	WUE Kg DM/mm/ha	Yield T/DM/ha	WUE Kg DM/mm/ha	Yield T/DM/ha	WUE Kg DM/mm/ha
Optimized irrigation 100%	29	59	13	36	6	20
Deficit irrigation 33%	22	56	10	34	3	12
Deficit irrigation 66%	19	52	9	28	2	7

What can you buy feed in for this year?

In the latest Hay and Grain Report on the Dairy Australia website cereal hay is currently about \$210 per tonne delivered to the Bega Valley. Then you need to add on feed out costs and any losses if your feed out system is less than ideal. The Grains2Milk project and the experience of local farms that have installed feed pads shows that feed out losses can be as high as 25%. Also remember that the feed value of cereal hay is not as good as quality pasture in spring.

Is there an answer?

Yes the cost of irrigation is high but do your own sums as every farm is different, discuss it with your consultant or agronomist, “expensive” irrigation water used efficiently can still provide cost effective feed.

Make sure your irrigation system is operating efficiently. Tests on centre pivot irrigation systems in the Hunter and Tamworth in 2011-12 show pumps to be, on average, 14% less efficient than the design expectations. These inefficiencies can often be rectified at fairly low cost. The work required to restore pump efficiency can pay for itself within a single season of irrigation.

Systems operating at excessive pressure were identified as the other factor causing higher pumping costs. Too much system pressure means dollars are being burned for no gain in production. Checking system pressures and ensuring they are just above minimum required nozzle pressure is a simple step towards avoiding excess energy costs.

We are working with two Bega dairy farmers this season to measure dry matter produced under adjacent irrigated and dry land pastures, and power costs associated with the irrigated block, so the story should become clearer.

But let's hope it starts to rain soon!

Full water allocations offer opportunities

Brett Davidson

Livestock Officer Dairy, Deniliquin

The Murray irrigation district has 100% water allocation. The last time farmers have had such access to high water allocation early was 1996!

Years of low or zero water allocations have changed the feedbase in the Murray Darling Basin from predominantly perennial pastures, to annual pastures and crops in order to try to produce the most fodder with the limited water. Many farmers also moved towards feedlot systems when no pasture could be grown.

Having a full water allocation early, with the option of buying carryover water to secure water for next season, offers farmers a great opportunity in crop selection for the coming year. Most dairy farmers are irrigating annual ryegrass pastures now, and are planning summer and autumn cropping programs, such as maize or millet.

Some farmers have already increased their area of perennial pasture with ryegrass and lucerne. Lucerne is a great option for those needing a quality fodder source over summer. Most will be planning autumn sowing.

Whilst milk prices are lower, this season farmers should be able to reduce their feed costs by using more home grown pasture and fodder crops. Some are already putting silage away for a not-so-rainy day. And others are looking at crops to provide some extra income, maize and rice will be used by some as cash crops.

Whatever the outcome farmers will not be short of options.

Silage – Is it worth the cost?

Neil Griffiths

Technical Specialist (Acting) Pastures , Tocal

Is silage (or hay) worth the cost? Let's look at the basics.

Silage is normally made from surplus pasture so there is a benefit to grazing management and future feed quality. If there is not a genuine surplus and the pasture could be grazed without waste then it should be grazed, no point increasing cost if there is a better option. If it is a true surplus then conserving pasture is usually the next cheapest feed option.

Crops such as maize are an option to increase dry matter production on farms where pasture is fully utilised. Work through the Future Dairy program has shown that 35 to 40 tDM/ha or more is possible with double and triple cropping based on maize silage.

Any decision to make silage should focus on improving feed quality. You will always get more milk from higher quality silage. Using a simple calculator available at

<http://www.dpi.nsw.gov.au/agriculture/field/pastures-and-rangelands/silage>

You can put in your own costs and estimate the likely returns. An example using standard assumptions shows that harvesting 4tDM/ha at 10.2 MJ will make a good return on the costs to make it. But letting the paddock bulk up and double in yield but lose quality to 8.0 MJ would actually lose money – the returns from milk may not cover harvest cost for low quality silage or hay.

In the short term it is a case of cut early, do all operations quickly to achieve target dry matter, good compaction and sealing, and minimise waste when feeding out.

Looking to the future, cost and wastage should be evaluated. Wrapped round bales have increased in popularity for many years. They are convenient but have always been the most expensive option, due to the cost of plastic and the extra work applying and removing it.

Some farms may find that a chopped silage system using pits, bunkers or low cost stacks on the ground may be cheaper especially if contractors can be organised. There is an issue in most districts getting contractors willing and able to do smaller jobs.

With a chopped silage it is important to have an efficient feedout system which minimises time and feed wastage. Beware feeding on ground especially in wet weather; losses of 20 to 50% are common.

With baled silage feed rings can dramatically reduce wastage (savings of 15 to 30 % were recorded in trials in WA and Cowra) but cow intake can be an issue if bales are not chopped.

If you want more information on silage or hay you can go to the NSW DPI website which includes all the Topfodder information (see above) there are also 1 day and 3 day Topfodder courses available.

Cutting ryegrass at the boot growth stage (when you can feel nodes on the stem but seed heads have not emerged) is usually the best compromise between yield and feed quality.



Photo: Ryegrass ready to ensile

What about maize silage?

Maize silage is finding a place on more dairies as farmers look to increase the amount of high quality home grown forage they produce. Although maize appears expensive if costs are considered on a per hectare basis, high yields and good quality mean that it can be good value if considered as \$/t or cents/MJ.

With grain prices going up it will be more important than ever to have high quality home grown forage available and maize can do this on some farms. Alternatives such as grain sorghum or soybean would only be grown where maize is unsuitable.



Photo: Tim Freeman inspecting maize silage at the Denman Topfodder Update earlier this year

There are a range of hybrids with different maturities and characteristics available. For best results most farms should look for a mid season hybrid with about 110 CRM. Longer maturities may have higher yield potential but often have lower quality due to grain to stover ratio. Quick maturing hybrids may have higher quality but lower yield potential.

Maize requires specialist planting and harvest equipment which often means working with contractors. It requires good soil nutrition and weed control for high yields and irrigation especially around tasseling is important.

In most areas 20tDM/ha and 10.5 MJ/kgDM are quite achievable. Maize silage will have low protein which means it is quite compatible with high protein ryegrass, lucerne or kikuyu pasture or it will need to be fed with a protein supplement such as white cottonseed or canola meal.

Although maize silage is a forage and not a direct alternative to grain you can compare costs in terms of cents per megajoule of metabolisable energy (c/MJME).

If you want to further calculate cents per MJME using your own costs and quality you can use the NSW DPI Feedcost calculator at <http://www.dpi.nsw.gov.au/agriculture/livestock/nutrition/values/feed-cost-calculator>

The Future Dairy website also has excellent Tech Notes on growing maize for silage.

A drier outlook for southern NSW

Michael Cashen

Agricultural Climatologist, Wagga Wagga

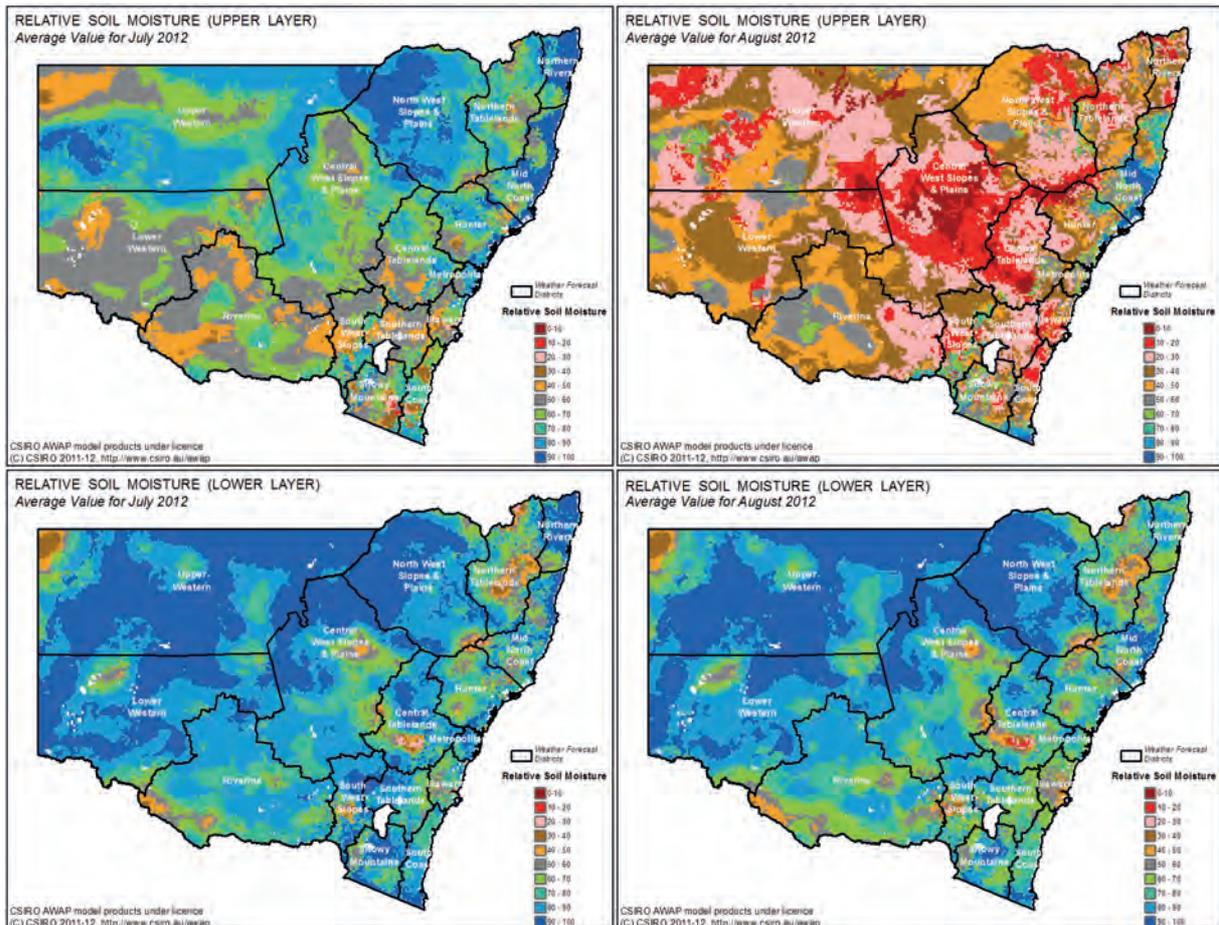
After two consecutive wet summers in 2010 and 2011 and a relative cool winter this year, many are curious as to what spring and summer 2012 are likely to bring. Modelling of the state's soils using CSIRO Australian Water Availability Model (AWAP) indicates a significant drying of the upper soil surface over the last month with subsoil significant reserves still evident.

Current oceanic indicators in the Pacific Ocean remain close to El Niño thresholds which typically lower the probability of rainfall during the spring period, however atmospheric indicators of the phenomena such as the Southern Oscillation Indicator

(SOI) remain within the normal bounds indicating that the atmosphere is not reinforcing the El Niño pattern.

Climate models surveyed by the Bureau of Meteorology suggest that Pacific temperatures should return to neutral late 2012-early 2013. Sea surface temperatures gradients in the Indian Ocean indicate a Positive Indian Ocean Dipole (IOD) has formed; such conditions typically reduce the probability of spring rainfall in southern NSW. The Bureau's POAMA model indicates that the Positive IOD is likely to remain in place until November 2012.

In summary the rainfall forecast for October to December 2012 is for decreased probabilities of above median rainfall in southern NSW (<45%) with near normal conditions for the remainder of NSW. Higher minimum and maximum temperatures can be expected for the period with higher chance of exceeding historic values for southern NSW.



Grain and Hay outlook

Hayden Kingston

District Agronomist, Bega

I've been having a look at the prospects for hay and grain for the coming season and the situation changes regularly. The analysts are still discussing and estimating the size of this year's cereal grain harvest in Australia and crop yields are still dependent on rain this spring to achieve their potential.

Grain prices have risen in response to lower production internationally with drought in the US. It looks like they may stay at these higher levels for a while due to the high demand for grain. Fodder stocks are low in eastern Australia but large quantities are expected to be made in the coming season to replenish stocks.

In a tough season when making and analysing decisions about feeding strategies it is important to have the best information available.

Where can you get the latest information?

A very good source of market information is the Dairy Australia Grain and Hay Report which is updated weekly with the latest information and discussion of trends in markets and pricing for all dairy regions.

Visit the website www.dairyaustralia.com.au and click on the Animals, feed and environment tab.

The website also contains lots of other great information and tools to help you when buying feed including different ways of buying grain or hay and the use of contracts or agreements to reduce and manage risk.

NSW DPI produces the NSW Grains Report each month which updates the progress of the NSW grain crop, it is available on our website www.dpi.nsw.gov.au. Other good sources of information include the marketing sections of rural newspapers and magazines.

It is also important to keep in touch with your grain and fodder suppliers to discuss your requirements and developments in the market.

Feed quality

In a tight year it is also essential to make sure the money you are spending on hay and grain is buying you exactly what you need, and is good value. It is worthwhile doing a feed budget to calculate how many tonnes of feed will need to be purchased. Use feed test reports to determine value per unit of energy and protein to compare the feeds on offer.

There are some tools available to help you crunch the numbers. The Feed Cost Calculator in the livestock nutrition section of our website allows you to put your own numbers in to calculate and compare protein, energy and other components of different feeds.

The Grains2Milk project on the Dairy Australia website has a feed report tool that helps you turn the results you receive from your feed laboratory for each feed sample analysed into decisions and actions on your farm. It puts your results in context of what's high and low quality for that particular feed, and may help you decide which feeds are the best buys. You'll get tips on how to balance this particular feed in a diet for milking cows. The report will also highlight what to consider when buying, storing and feeding that particular feed to your herd.

DPI WEBLINKS

<http://www.dpi.nsw.gov.au/aboutus/resources/periodicals/newsletters/grains-report-nsw>

<http://www.dpi.nsw.gov.au/agriculture/livestock/nutrition/values/feed-cost-calculator>

Helping the cream rise to the top

Applications are now open for the Sydney Royal Dairy Scholarship!



The Sydney Royal Dairy Produce Scholarship has been created to kick start the career of a passionate individual who is committed to a career in the NSW dairy industry.

The successful applicant will receive a \$5000 scholarship for full-time study or a \$1,500 scholarship for part-time study as well as the opportunity to be a steward at the Sydney Royal Cheese and Dairy Produce Show and attend the National Cheese and Dairy Judges Accreditation program.

While the areas of study may vary, all applicants must demonstrate their dedication to developing a profession in the NSW dairy produce industry. Courses can be devised as farm management, agricultural and veterinary science, food technology to marketing.

Applicants simply need to fill in the online application form found at www.rasf.org.au explaining why they are passionate about the NSW dairy produce Industry and how they want to play a part in its future.

Applications close **30 November 2012**. For more information visit www.rasf.org.au

T: 02 9704 1234 E: foundation@rasf.org.au

Beware the quick fix...

Neil Griffiths

Technical Specialist Pasture, Tocal

Times are tough, budgets are under pressure and seasonal conditions could be turning in some areas. A quick fix and an easy answer sound very appealing but what are the chances of a good result?

On most farms now is the time to get back to basics, doing the simple things well and not taking high risk options. Doing financial budgets, reviewing fertiliser and feeding programs and making sure the farm is operating as efficiently as possible.

There seem to be an increasing number of additives, alternatives, traces of something special and things that sound too good to be true on offer. The claims may be tempting but before rushing in consider the simple questions. If it contradicts everything known on a subject, or is based on someone a long way away having a miraculous observation of what happened in the paddock next door, it may be true and do what is promised but chances are that it won't.

Ask for information and evidence. There is a reason that scientists do replicated trials and then repeat them. They want to be sure about what is happening. Many products have looked good in the past couple of years, but then most areas have had some of the best seasons ever. Did the special treatments appear to work just because it rained?

Unless test strips and comparisons were used we are left wondering. Comparing results in one paddock to what happened in a paddock next door is the least reliable evidence of all.

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DAIRY NSW NEWS

Employer obligations under a Training Contract

A key role of the NSW Dairy Education Committee is to gather intelligence on skill shortages and training needs of the NSW dairy industry.

At a recent meeting the group discussed traineeships and how some farmers were a little confused about their obligations when hiring staff via a traineeship. Committee member Melissa Wortman, Executive Officer AgriFood NSW, provided the Committee with a summary of training plan requirements and Andrew Dodd Training Services Manager from The Office of Education NSW discussed the importance of the training plan as a communication tool. It is important that employers are aware of their obligations.

Following are some useful tips for dairy farmers to consider:

- Signing a training contract comes with obligations for the trainee and the employer.
- The training contract that you both sign aims to highlight the commitment that is required by both employer and employee to ensure that the trainee emerges as a skilled and knowledgeable dairy farm worker at the end of the training contract.
- To ensure success explain the job requirements clearly and provide an induction to the trainee - this will lessen the chance for job expectations not being met.
- The qualification listed on the training contract must align to the job role.

- The training plan is a document provided by the training organisation to outline the agreed units of competency and communicate what is required for the trainee to achieve the qualification.
- It is important that the training organisation is clear about the employer's role for each competency on the training plan because a lot of the training will take place on the job and the employer will be required to provide opportunities to develop the skills and knowledge for each competency.
- Talk about issues as soon as they arise, you can seek advice from your Australian Apprenticeship Centre or the State Training Service on 13 28 11.

Further information can be found at www.training.nsw.gov.au/forms_documents/index.html under the 'Training Plans' tab.

Members Council Forum Coming Up

The annual Dairy NSW Members Council Forum will be hosted this year by the Hunter Dairy Development Group. It will be held at the Visitors Centre at Tocal Agricultural Centre on the 24th & 25th October. For more information please contact:

Kate MacGilvray, Executive Officer
Dairy NSW
Phone: 0409 810954.

For a full list of coming events across the NSW dairy industry, visit NSW DPI's Dairy Connect website and register to receive fortnightly updates.

Or call the Coordinator to arrange to have the coming events faxed to you.

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Primary Industries

