The Dairy Farmer
February 2002

Lincoln dairy farm will help environmental research

While staff milk 520 cows on the new Lincoln University dairy farm, scientists and researchers will begin work on projects which will benefit South Island dairying and environmental agencies. The farm is managed as a commercial unit to achieve high production and integrate research. Dexcel scientists, Lincoln University researchers and students will work together to validate their research on a best practice commercial dairy farm. It is hoped the farm encourages top students to attend Lincoln then put their training to use in the dairy industry, helping achieve sustainable growth. Extension activities will also be a key factor in the success of the farm. "We need to transfer research results to farms and will do this through the South Island Dairy Event, articles in industry journals, collaborative field days with Dexcel and involvement in farmer seminars and visits," said Professor Keith Cameron from the Lincoln University Centre for Soil and Environmental Quality. "It is critical we get the information out to farmers. We must deliver the outcomes - not just a paper.

Part of our job is to help the industry achieve the 4% productivity gain in a sustainable way...

..while maintaining environmental integrity." Key objectives of the farm are -

- To demonstrate world-best practices in dairy farm systems and to transfer them to dairy farms throughout the South Island.
- To operate as a joint research centre with Dexcel where the practical application of new technologies and on-farm forage production systems can be tested and developed.
- To use the latest environmental monitoring systems to achieve best management practices under irrigation, which ensure that the industry's 4% productivity gain target is achieved in a sustainable way and that the wider environment is protected.
- To assist Lincoln to attract top quality domestic and international students into the New Zealand dairy industry.
- To provide a commercial return to the University.

The new 186ha property (165ha irrigated) is a former university sheep farm but a $1.6 million conversion has created a 520-cow unit milking through a 50-bail rotary. Initial budgets for the farm are based on producing 184,000kg MS from 500 cows. Next season the target will be 220,000kg from 600 cows, then 240,000kg when the full herd of 650 is in place. The first research to be carried out on the property will determine the effect of fertilisers and other farm inputs on groundwater. Sixty lysimeters (soil measurement columns) will be sunk in selected paddocks to monitor and manage the effects of fertiliser, grazing, irrigation and effluent inputs over a variety of contrasting soil types. The results will help dairy farmers, consulting officers and farm advisers with new practical, effective and safe farm management practices.

Irrigation is a major part of the conversion, with two 400m centre pivots each covering about 80ha. Extended arms will irrigate the corners and other areas will be covered by long laterals. The different types of irrigation being used on the farm will allow scientists to research the effects of irrigation and ensure farmers are getting the most efficient use from every litre. Manager Brett Walter has a background in commercial dairying on his own account and also in research dairying at Ruakura.

Irrigation is a major part of the conversion, with two 400m centre pivots each covering about 80ha.

Inside

Special reports:

Also:

See us at our new-look website www.filnz.co.nz

Arnon works one of Northland's biggest farms

As farm manager on an 800ha Northland unit milking 1800 Friesians, Arnon Langridge gets little time to do anything except plan and administer one of the largest properties in the Far North. He is in his third season managing the farm about 15km south of Kaikohe, before that he worked as a lower order sharemilker in Northland and on farms in Taranaki. Arnon originally came to the farm as a lower order sharemilker when it was in two properties each milking 550 cows. When the owner decided to increase stocking to 1800 cows the long time manager left and he was offered the job. "It was a good opportunity to work on one of the biggest dairy farms in the North. There are nine full time staff and three part time and although it's run as one farm, there are two dairies." Arnon has been using FiL products for seven years, firstly in Taranaki and then in Northland, and Ultracare Iodoshield since it was launched on the market. "Every new dairy we went into I threw out the other companies stuff and brought in FiL because I like the products, particularly the detergents and Ultracare Iodoshield. I've used other products from time to time just to keep a check on things but have always found they don't work and I've gone back to FiL. "Ultracare Iodoshield gives us the results with better teat condition and it's better at controlling cell counts, even in the wet weather we've been having. We very rarely have to step it up to the higher dose rate - except this year when all the races have packed up and the cows were up to their bellies in mud sometimes."

"Every new dairy we went into I threw out the other companies stuff and brought in FiL because I like the products"

"Ultracare Iodoshield gives us the results with better teat condition and it's better at controlling cell counts"

Arnon and Nicola Longridge with children (L to R) Sean, Connor and Shana.

South Island opens up opportunities for Steve

Former Te Awamutu dairy farmer Steve Bell saw more opportunities for sharemilking and ownership in the South Island, so the family moved to Murchison five years ago. He and wife Jenny sharemilk 380 cows on a 150ha property 30km south of Murchison at the top of the South Island and when the time comes to buy their own farm they will be staying in the south. Two years ago he switched to UltraCare Teatshield because FiL Area Manager Ian Grooby lives just up the road and provided the kind of service he needed. "We changed to FiL two years ago, because Ian is always easy to get hold of, knows the area and the problems we have and can get us product when we need it." Steve says Ultracare Teatshield is the ideal teatspray on this farm because it gets "all sorts of weather" yet he had no teat problems.

"I think we've had one cow with sore teats this season and it can get very muddy. My cell counts are below 200,000 and we don't get mastitis. We also have a nearly new DeLaval 40-bail rotary and the cows almost go to sleep on it they're so relaxed." Steve gets time to play golf at Murchison and with deer and pigs on the farm boundary not 400m from the house and the Maruia River nearby, he also gets plenty of chances to hunt and catch trout.

"He knows the area and the problems we have and can get us product when we need it"

Steve Bell and wife Jenny.

Tauranga's heaven for Brian

When Brian Kirby was appointed FiL Purchasing Manager it was another step towards fulfilling his goals. Ever since he and wife Marion returned from OE seven years ago they have wanted to move to Tauranga, near the beach and the fishing grounds. With his new job, the couple now with two small children and a third on the way, can settle down in the city of their dreams. Brian started at FiL last month and will work with director Dave Hancox learning the ropes before taking over the purchasing role when Dave goes into semi-retirement. For the past 13 years Brian has worked in a number of firms involved in quality control, science and production planning. Most recently this includes Greens Industries, tap manufacturers in Hamilton, where he has been responsible for inward and outward product, production performance and maintaining ISO9001 accreditation. Since gaining a BSc in ecology and physiology at Waikato University, Brian has worked for a veterinary vaccine manufacturer as quality control technician, in the Dairying Research Corporation (now Dexcel) laboratory, with NIWA and for five years in quality, production planning and purchasing at Carter Holt Harvey Plastic Products in Hamilton. "We had always wanted to move to Tauranga and when this job came up at FiL I grabbed it. The company is very professional and progressive and the work fits exactly what I've been doing for a number of years." He sees the position as a critical one because the flow of materials into the company and the production of dairy hygiene and animal health products for our customers must match perfectly. "The factory has to be kept running and the customers kept happy at the same time - not an easy job," he said. They have already bought a house and will move in this month, selling their historic house in Hamilton. Outside work Brian likes working with wood, playing touch and hockey and, of course, fishing and boating. In the future he hopes to buy a boat and take full advantage of what the Bay of Plenty offers.

"The company is very professional and progressive and the work fits exactly what I've been doing for a number of years"

Brian with 3 year old Alex and Hannah, 15 months.

www.filnz.co.nz

FiL's upgraded website www.filnz.co.nz is a valuable dairying resource centre, according to Communications Manager Trish Galvin. FiL's original website was launched in 1997 but technology advances and evolution of the FiL brand have resulted in the update. "The site provides improved service to our predominantly rural customers and is designed with slow rural access speeds in mind so downloading is easy and fast. Product information is extensive with easy access to product safety information," she said. "It is interactive with the latest news and a bulletin board so customers can post topics they want to discuss with other farmers. All FiL products are listed, as are members of our Farm Services Team. The Dairy Farmer magazine is archived with the current issue available on line at the click of a thumbnail on the front page, while on a more technical level the site will eventually let our rural retail partners order product directly from the web.
Trish Galvin says: "This is a facility for farmers and we want them to use it. If there is anything missing or they would like something added they can contact us via the site and we'll try to help."

The new look www.filnz.co.nz website

MAF plots future irrigation use in New Zealand

By Chris Ward, Senior Policy Analyst, MAF Policy Information and Regions.

Nearly all farming sectors have enjoyed increasing prices and profitability over the last 3 years. Growing more grass is now very profitable and has increased the potential value and demand for irrigation. Chris Ward reports on a study that investigated the effect of changes in land use on irrigation demand. In 2001 MAF Policy commissioned a report by consultants Nimmo-Bell entitled "Water Allocation Issues and Landuse Change in New Zealand Agriculture and Forestry to 2010". It forecast likely demand for water resources by simulating a vision of New Zealand agriculture and forestry landuse to 2010. According to these estimates, viticulture and deer are forecast to continue rapid growth and while growth in dairying land is expected to decrease from 56% 1990 - 2000 to 16% 2000 - 2010, dairying is still forecast to experience the largest increase in land area at 265,600 ha. The impact of dairy farming on water availability has been the focus of considerable public and media interest due to rapid changes in dairying area. The following table shows the regional distribution of forecast dairying growth in New Zealand. Dairying is forecast to increase rapidly in the South Island with Canterbury, Otago and Southland contributing 50% of the forecast growth in dairy area. There are very good reasons for this growth, mostly pertaining to profitability expectations. MAF's Farm Monitoring models calculate that during 2000/2001, Canterbury dairy farms generated a 14.5% return on assets. This is significantly higher than Canterbury sheep and cattle breeding and finishing farms and arable properties, which generated a 5.6% and 4.4% return on assets respectively. The report uses the above figures on forecast landuse changes combined with information combined on land suitability (e.g soil type) offset against the cost and availability of water to establish future irrigation demand. This data is combined with potential irrigable land in table A. Table A indicates that the national irrigated area is estimated to increase by 28% by 2010, with nearly 40% of the increase occurring in Canterbury. In addition, the combined Canterbury (62%) and Otago (16%) regions will account for almost 78% of the irrigated area (down from 81% in 2000). However, these landuse growth projections presuppose that new conversions will be able to get irrigation water permits to extract, in most cases, groundwater. There is debate in Canterbury on this right now. Questions raised include: Will underground water run short and/or the new wells reduce the supply from existing wells? Could and should the Canterbury Regional Council continue to issue permits on a first come first served basis, for how long and with what conditions attached? Should a more planned and rationed approach be adopted? Could or should applications for water extraction be considered on other than environmental impacts, for example, the generation of jobs per unit of water used, such as in intensive horticulture uses? Should all amenity uses be satisfied before any "commercial extraction" is allowed? Relative to other provinces, Canterbury is estimated to have a higher

Growing more grass is now very profitable and has increased the potential value and demand for irrigation.

Currently the water allocated for irrigation in Canterbury is greater than the rest of New Zealand combined.

Trends in irrigated area by region

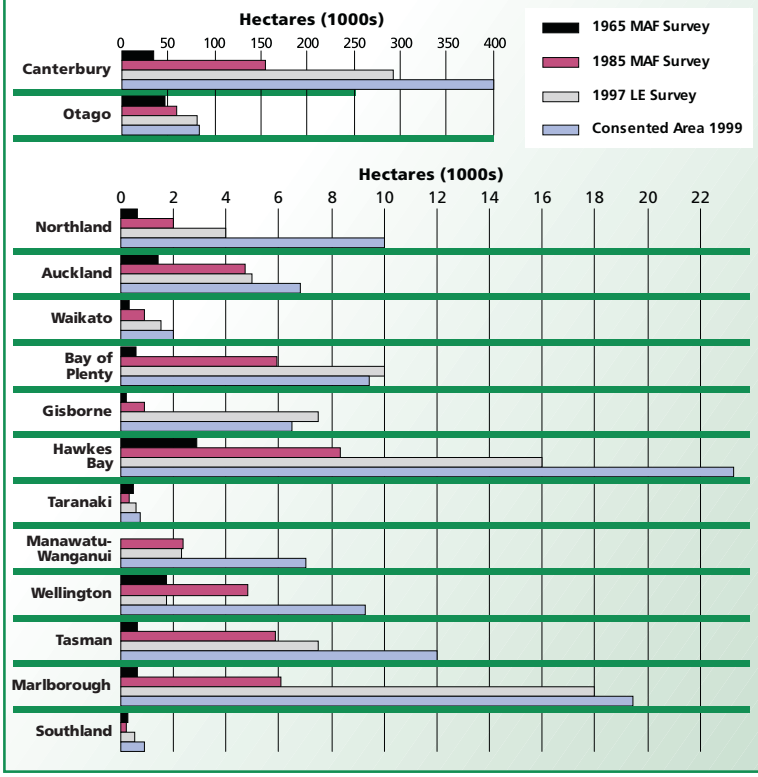


Table B: Regional Demand and Supply Profiles

Region	Current demand (ha)	Future demand (ha)	Projected supply (ha)
Waikato	17,800	32,600	184,500
Hawke's Bay	29,000	37,900	29,900
Wairarapa	8,600	14,500	36,800
Marlborough	14,200	20,900	46,200
Canterbury	432,000	495,900	650,600
Otago	155,700	194,500	252,300

Table A: Projected Irrigation Demand (ha)

Region	Land irrigated 2000	Estimated Demand 2010	Potential Irrigable Land
Auckland	4,000	8,700	81,900
Waikato/King Country	4,500	13,600	348,600
Bay of Plenty	9,300	14,500	105,100
Hawke's Bay	23,200	31,200	149,700
Manawatu/Wanganui	8,000	12,900	241,700
Wellington/Wairarapa	9,300	14,600	67,000
Marlborough	12,100	18,300	65,800
Canterbury	347,000	404,000	693,100
Otago	65,100	101,400	343,300
New Zealand	**505,500**	**649,500**	**2,031,000**

proportion of irrigated land in 2010 (58% of potential irrigable land). But it still has the greatest potential for further irrigation development with its large flat land area, community schemes and availability of ground water. Most new irrigation will be developed in Canterbury, followed by Otago. Currently the water allocated for irrigation in Canterbury is greater than the rest of New Zealand combined. Of the 249cumec allocated for irrigation in Canterbury, 67% is from surface water and 33% from ground water - very little is from artificial storage. Pre-feasibility studies that might change this are underway within communities at present, but it may be 10 years before farmers are using water from artificial lakes collecting winter rainfall. Nimmo Bell combined information from regional councils with forecast irrigation demand to produce regional water supply and demand profiles for six regions

This shows that demand for irrigation is forecast to increase in all six regions.

(Table B). This shows that demand for irrigation is forecast to increase in all six regions. Hawke's Bay is the only region where demand projection is expected to exceed the potentially available water supply. Canterbury and Otago are forecast to demand 76% and 77% of projected supply. More work is needed on forecasting supply and demand on a catchment level to more clearly identify water surplus/deficit situations. A much more detailed analysis of the projected water demand and supply situation for Canterbury on a catchment basis is nearing completion. The report highlights that demand for water will rise, driven by an estimated 28% increase in demand for irrigation water. This will increase pressure on the environment and may restrict on farm economic development in those areas where demand for water is increasing beyond acceptable levels. Work is needed to identify particular catchments where water supply will become an issue and to provide efficient and effective means of allocating a limited resource including storage schemes. A lot of the "ability" to issue further water permits hinges on achieving more efficient water use by all current users and matching more closely the water allocated with the actual or potential use. With the value of water becoming more explicitly recognised and likely drying of the East Coast of both Islands as a result of climate change, current users are naturally anxious to retain the water allocations they have. Managing these two conflicting desires will not be an easy task.

Centre pivot irrigator in Mid Canterbury.

Ministry Draws up Irrigation Picture

Water allocation is a high priority in the Ministry's National Agenda for Sustainable Water Management

The Ministry for the Environment has commissioned Lincoln Environmental to develop a national picture of water allocation, sources, uses and allocation systems within every New Zealand region. Water allocation is a high priority in the Ministry's National Agenda for Sustainable Water Management and the report provided a quantitative analysis of where the water is allocated from and the uses it is allocated to, as well as a summary of the management of water quantity and allocation by region. Analysis of existing water supplies showed the following:

- 70% of all water allocated in New Zealand is allocated from surface water, 30% from groundwater.
- 77% is for irrigation, 16% for community, municipal and domestic uses and 7% for industry.
- 58% is allocated from Canterbury. The North Island only accounts for 17%.
- 19% of weekly allocations have been made since 1990 so aren't allocated under the Resource Management Act.
- 500,000ha is irrigated with 350,000ha in Canterbury.
- 41% of irrigated land is from groundwater.
- The area of irrigated land is increasing by 55% a decade.
- The "at farm gate" value of irrigation is about $800 million.

Irrigated land use is changing, from 1987 when 80% was for pasture, to current reports which show horticulture and arable crops now take up 35% of the irrigated land area. Rough estimates indicate that about half the potentially irrigable land in New Zealand is currently irrigated. However, irrigation is no longer seen as dealing with drought insurance, but about farming systems which have more control of production factors and have the capability to produce crop and animal products to consumer quality specifications under contract for delivery on a specific date.

Water allocated for irrigation and irrigated area by region and land-use type

Council	Water allocated for irrigation (m^3/s)[1]	Consented irrigated area (ha)	Irrigated area (MAF estimates) (ha)	Allocation[2] (mm/ha/wk)	% of irrigated area in land-use type (MAF estimates)				
					Dairy Pasture	Other pasture	Arable	Horticulture[3]	Viticulture
Northland	3.9	not available	4,000	55	62%		2%	37%	
Auckland	2.1	6,833	6,500	19	13%			87%	
Waikato	3.3	not available	4,500	44	14%			84%	2%
Bay of Plenty	3.6	9,435	9,435	23	23%			76%	
Gisborne	1.2	not available	5,000	15	8%		2%	90%	<1%
Hawke's Bay	11.4	23,242	23,242	30	8%	8%	35%	41%	8%
Taranaki	0.4	not available	2,000	13	88%		12%		
Manawatu Wanganui	2.0	not available	8,000	15	70%	8%	20%	2%	
Wellington	3.9	9,273	9,273	26	60%	10%	10%	14%	6%
Tasman	5.8	11,737	8,000	30	5%	3%	5%	84%	3%
Marlborough	6.5	19,415	12,087	20	7%	2%	29%	33%	29%
Canterbury	209.8	400,091	350,000	32[4]	34%	36%	27%	2%	<1%
Otago	75.8	84,593	66,260	55[4]	24%	67%	2%	6%	1%
Southland	0.5	not available	1,500	20	70%		20%	10%	
TOTAL in NZ	**331.8**		**509,797**	**34**	**31%** (158,229 ha)	**34%** (173,186 ha)	**22%** (112,613 ha)	**11%** (58,389 ha)	**1%** (7379 ha)

Notes:
1. All based on weekly allocated volumes.
2. Allocation per hectare is worked out using the consented irrigated area where available. Otherwise the MAF estimates are used.
3. Horticulture includes fruit, vegetables, market gardens, glasshouses, and plastichouses.
4. Canterbury and Otago have substantial difference in allocation between surface water and groundwater - surface water allocation is 40 mm/ha/wk (Canterbury), 55 mm/ha/wk (Otago), groundwater is 24 mm/ha/wk (Canterbury), 25 mm/ha/wk (Otago).

Milk hygiene-grades and standards

By John Atkin
FiL Area Manager
South Taranaki/Wanganui

Milk hygiene in New Zealand requires a great deal of attention to detail because our milking practice requires very short contact times and cleaning volumes in relation to many countries.

Hotspots in the Plant

- Top of milk line (insufficient flow or volume)
- Air lines
- Liners too old
- Seals, taps and cone seals
- Milk filter cages
- Milk pump diaphragms
- Plate coolers
- Entry points and tap
- Sight glass (if any)
- Outlet and seals
- Door seals and just beneath the door into dome vats
- Agitator
- CIP unit in vat is the wrong type
- Testing buckets (quarter milkers shouldn't have one anyway)
- Not enough hot water, water not hot enough (often due to night rate power not staying on long enough)
- Incorrect amount or wrong type of detergent being used
- Low foam v high foam
- Not enough cold water pre-rinse (should be 10 to 20litres/set of cups, removes up to 97% of soil)

Water tables for vats

The golden rule for determining flow rates for vats and silos is 100litres/min for every metre diameter of tank eg 2.9m vat requires 290litres/min (17,400litres/hr), height measured from base of silo to top of tank.

Grading Problems: As standards within the dairy industry tighten, "unusual" grades are on the increase. They may have existed before but were masked by the overall higher microflora. Milking machine design, set up and idiosyncrasies are playing a greater part in hygiene control. Milking plants need to be balanced so the same flow rates can reach all parts of the machine, using the same foam levels without shutting it down and without throttling the jetters to compromise. This can be achieved in most new machines but many older ones are being modified with parts and systems that have very different characteristics to the old.

...our milking practice requires very short contact times and cleaning volumes in relation to many countries.

Problem Spots

There are six main areas that persistently show up in farm calls and are related to plant design or setup.

1) Milk line upper surface. This is usually due to excessive fall, oversized lines, excessive pumping rates, restricted jetters and inoperable flushing pulsators.

2) Receiver can, upper surface and ends. This is especially the case with large horizontal cans and is very hard to solve. They should really be flooded with cleaners or the flow diverted to the top and rear.

3) Piggyback traps and vertical airlines. These must be cleaned if situated above the receiver and liquid can run back. This is very hard to balance.

4) Split milk lines and long piping runs. Mainly a problem in rotary plants. Causes poor flow in split areas and loss of turbulence in long runs.

5) Dirty clusters and inflation ends. Partly design (hard to strip or replace seals in some cases), partly laziness. Inflation ends are a problem with button jetters and general set up.

6) Vats. Poorly designed and inadequate spray balls, inadequate temperatures, flow rates and volumes. Made worse by erratic or untimely pickups. There are also the old standbys of deadends, dud seals, shot rubberware and poetic plumbing.

Grading Indicators

Thermodurics: These bacteria can survive high temperatures and can be killed by direct contact with acid or alkali cleaning solutions and sanitisers. There are three common situations for thermodurics: Protein deposits in vats and receivers Faulty rubberware Mineral deposits. Vats are one area where thermoduric grading tends to be highest. To keep them clean pre-heat for alkali washing. Follow with the appropriate alkali solution and hot water, recycle for five minutes or to 60°C then dump and flush with cold water and acid detergent to sanitise.

Bactoscan: A measure of the total bacteria content of your milk. There are a lot of bactoscan grades in early spring and most are caused by sub-clinical mastitis. If a farmer is bactoscan grading and it is not animal health, then you are generally looking at hygiene grades. They are a general grade so you need to look at things like filtering (change milk filter socks daily).

Coliform Bacteria: Bacteria usually found in dung, soil and sometimes the water supply. Coliform grades are usually the result of poor plant cleaning but the bacteria are easily killed by hot water. They grow rapidly if milking machine cleaning is poor and continue to grow and multiply in the bulk milk until temperatures fall below 7°C.

Sediment: Sediment Is mostly from dung around the teats but may also come from dirt, dust, hair and other material. Effective teat washing and filtering through an approved filter removes most of the sediment before it enters the bulk milk tank. Dust can enter afterwards if milk tank is left open.

Senses: This test checks milk for any undesirable flavour, smell or appearance. Its main purpose is to detect "sour" milk. Flavour and smell problems can be caused by using chemicals that aren't approved or using them incorrectly, by cows which have eaten strongly flavoured weeds such as land cress or by grazing pastures recently sprayed with herbicides. Senses can also occur if free fat levels are high - milk has been aerated or damaged during harvesting. Appearance problems are usually due to blood (pink) or colostrum (yellow).

Somatic cell count: Checks milk for cells from cow's body and blood. The cells normally occur in low numbers but increase when cows have mastitis. The SCC test is an indicator of herd infection levels.

Inhibitory substances: Substances that inhibit the growth of bacteria in milk (eg when making cheese). They are almost always the result of including milk from cows treated with antibiotics. Other causes are cows treated with other drugs and using pessaries. They can cause human health problems and affect manufacturing.

Freezing point: Processors object when water is added to milk because of increased transport and processing costs. The problem may arise from water leaking into the milk side of coolers, not draining the plant after milking and permanent (illegal) reverse flow connections. Rinse water going into the bulk milk tank is the most likely cause.

Colostrum: The first milk produced after calving. Deep yellow and creates manufacturing problems. The solution to a grading is easy - separate at least the first eight milkings from the bulk milk supply.

Collection temperature: Milk must be below 7°C within three hours of milking. The end of milking is taken to mean 7.30am and 6pm.

DDT: All new supply properties must have a weighted average soil level of no more than 0.2mg DDT/kg. Suppliers are tested for DDT in the milk and graded accordingly. If the level exceeds 1.0mg DDT/kg collection will stop.

Summary

Cooling: primary cooling must cool the milk to a minimum 18° before entering the vat.

Environment: keep the dairy clean and free of birds, rodents and other animals.

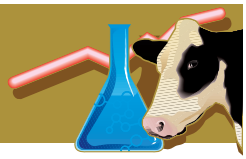
Milking practice: Keep hands, clothes and concrete clean. If udder washing is necessary do it properly, use only clean water and paper towel to dry.

Plant: Open and inspect any taps and blind spots where milk can be trapped, hand clean and re-assemble. Follow a programme of replacing rubberware at appointed times eg 2500 milkings for liners, every two years for other rubberware.

Grade Investigations

Identify the type of grade. Follow a standard procedure of checking and recording areas. If it is animal health identify, isolate the teat, record and review. Use your veterinarian. Use detergent reps such as FiL Area Managers.

Technically speaking...



Effect of post-milking teat spraying on mastitis

Teatspraying after milking results in a significant reduction in somatic cell counts, according to a study undertaken by Dr Jane Lacy-Hulbert. While teatspraying after milking has been a cornerstone of mastitis control for 30 years and overseas trials suggested post-milking teat disinfection by teat dipping could reduce the incidence of mastitis by 50%, there had been no trials in New Zealand looking at our pasture-based system. A trial conducted by Dexcel during the 2000/2001 season looked at this question. The results clearly indicated that post milking teatspraying is still an effective and relevant control measure for New Zealand dairying. Teatspraying was effective in preventing infections by both the contagious bacteria such as Staph. aureus and C. bovis and also for environmental bacteria such as Strep. uberis which resulted in a significant reduction in cow SCC. The trial saw 500 cows, split across four commercial herds and a group of twins within the Dexcel No1 herd, used to determine the effect of teatspraying after milking with an effective teat sanitiser. Half the cows were teatsprayed after milking with an iodine-based product, the other half were not sprayed. The teatspray product had shown high bactericidal efficacy in the standard teat sanitiser evaluation process used in New Zealand. The trial began at calving and was completed at drying off, with milk samples collected from all quarters for bacteriological culture at calving, on two occasions during the season and at drying off. SCC results were obtained from herd tests and teat skin condition was examined periodically on all 2000 teats during the trial. The number of clinical mastitis cases was reduced by 46% for the sprayed cows - these were all new infections arising in previously uninfected cows. The reduction in total infections (ie. clinical plus subclinical infections) varied between different bacterial pathogens with the greatest reduction observed for Strep. uberis infections (73%), then Staph aureus infections (53%) and then the minor pathogens such as C. bovis (33%). The impact of these reductions was observed in the SCC, with the sprayed group showing approximately half the SCC levels (on a bulk tank basis) of the unsprayed group at all stages during the season. In terms of teat skin condition, there was a 63% reduction in the incidence of cracks and lesions for the sprayed cows.

The results clearly indicated that post milking teatspraying is still an effective and relevant control measure for New Zealand dairying.

The number of clinical mastitis cases was reduced by 46% for the sprayed cows

By Dr Caustic

Caustic's corner

Some brief thoughts about teats. While some farmers are teat men, others prefer different portions of the anatomy, although teats are the moneymaking mechanism of your cows. There is no doubt that continuing to spray throughout the season shows benefits in teat condition and a reduction in new infections, but it can also be an advantage in the following season as well. Post-milking is the important time, pre-milking spaying is of doubtful value and you still need to get the teat canal protected as soon as possible after the cups come off. During the drier period, if there is such a thing, it may be worth switching to a milder, high emollient product as there is less challenge from the weather and soil conditions and more from drying and machine abuse. Many farmers have noticed immediate reductions in already low SCCs when changing from iodine. This is probably as a result of low-level iodine sensitisation in some herds. It can also be a problem with milkers exposed to the chemical drift. Don't expect the teatspray to eliminate problems in the milking plant, in spite of the comments made by some less informed "experts" in the field. Apart from lowered overall counts from reduced infections and some reduction in overall environmentals, it will not kill spore formers which is where most thermo grades come from. From the point of view of thermodurics, rubberware replacement and meticulous attention to hygiene are a must. Don't forget the vat. If you have trouble getting to see it because of pickup times, request a day pickup. Happy milking, Dr Caustic

There is no doubt that continuing to spray throughout the season shows benefits in teat condition and a reduction in new infections

The many faces of FiL

Dave Hancox - from trucks to chemistry

Dave Hancox with now 2 year old Axle Jack due to start racing later this year.

Dave Hancox left school without any qualifications, only finding out later in life that going back to school isn't easy.

One of FiL's founding directors, he attended Flock House before milking cows in the Manawatu, then in the Bay of Plenty, before joining the Chemical Cleaning Company in the late 1960s.

It was here he met up with fellow founding director Arthur Jordan as they helped pioneer the trucking of bulk caustic soda to dairy factories. Based at Mount Maunganui they drove trucks to dairy factories and large industrial plants the length and breadth of the country.

As the company became more deeply involved in manufacturing specialised dairy detergents, Dave realised he needed to develop his knowledge so he went to night school, studying chemistry then management.

In 1978 he and Arthur had the opportunity to pick up the animal remedies side of a failed Wanganui-based company and operated it while still working for the Chemical Cleaning Company.

Four years later Dave, Arthur and another shareholder bought out the others and began developing FiL into a force in the dairy industry. They were the company, manufacturing and packing the products and promoting their sale to retailers.

By the late 1980s the company's main focus was on the dairy industry

late 1980s the company's main focus was on the dairy industry and Dave and Arthur spent more time developing and selling dairy detergents and allied products.

"Dairying became our real focus because we knew how to develop specialised cleaners and the industry was taking off. The first dairy hygiene product we marketed was 30Plus and it's still used today. Since then we've developed a whole range of new teatsprays, detergents and bloat remedies."

In the early 1990s FiL appointed the first two members of its Farm Services Team. Dave Hewson and Trevor Gulliver (now sales manager) were the first appointees and are still with the company. Now there are 15 sales staff covering the country.

"We get most satisfaction from knowing we make and sell really good products and can see them working in the field."

Dave says although it is difficult to quantify, FiL has a major share of the dairy hygiene market in New Zealand as well as good sales overseas.

"We get most satisfaction from knowing we make and sell really good products and can see them working in the field."

While Dave is "semi-retiring" as he puts it, he will still be involved in product development - an area of the company he enjoys most - and market direction.

From his property just outside Tauranga he will continue to own and train racehorses, spend more time fishing in the Bay of Plenty, try to maintain a 9 handicap and regularly help out his son who farms near Balclutha.