



The machine was designed with the needs and wants of the farmer and the individual cow in mind. A cow can make its own decisions on when to be milked, going outside for grazing, eating or lying down. It will visit the robot on its own free will as often as it likes, resulting in yield increases of up to 20%

A new future in milking

by Fidelis Zvomuya

Dairy farmers today have to keep on evaluating new techniques if they want to optimise their operations to remain profitable, cut costs as well as increase their per herd productivity, says Jochen Dohring, spokesperson for the Lely Group.

In an interview with *Dairy Mail Africa* in Berlin during the recent International Green Week, Dohring said, in an effort to make sure that dairy farmers produce good quality products with reduced costs and management, his company launched the Astronaut 3 robotic milking system in November 2005.

Enhanced productivity

The system is meant to enhance productivity and reduce overall operating costs, while at the same time giving the modern-day dairy farmer the necessary management tools to increase

the profitability of his herd through proper herd management. "This machine was designed with the needs and wants of the farmer and the individual cow in mind. A cow can make its own decisions on when to be milked, going outside for grazing, eating or lying down. It will visit the robot on its own free will, as often as it likes, resulting in yield increases of up to 20%," he said.

The system comprises all of the necessary equipment, vacuum system, milking system, cleaning as well as electronics. The milk quality control system within the machine, ensures optimum control of udder health and milk quality by means of colour and conductivity measurement.

"The dairy farmer can profit from this robot with improved output, enhanced user-friendliness, revolutionary milking technique as well as reduced and more flexible maintenance costs.

"Cows can enjoy being milked in an outstandingly animal friendly system with enhanced



comfort. It will have optimal space and can move freely, not in any way being fixed by brackets or any other encumbering parts," Dohring said.

Sensors fitted in the floor determine the animal's position in the box. The unit is a stand-alone construction that needs connection to water, power, compressed air, feed augers and a milk line to vat.

The main components

Its main components are a cow cubicle with entry and exit gate, feed bin with three feed type inputs, variable speed vacuum pump, pulsation unit, quality control measurement device, milk jar with litre measure float, milk pump and filter sock housing, hot water service and cleaning chemical pumps, robot arm with four teat cups, control electronics and display key pads.

The Astronaut is a machine that offers substantial financial and lifestyle advantage to dairy farmers. It also liberates farmers from labour intensive milking as well as increased milk production.

"With the help of the Astronaut robotic milking system, one person can milk 1,2 million litres of milk per year. This saves money on the part of the farmer through reduced labour costs. It will allow farmers to spend more quality time with their cows, more time to make top quality silage," Dohring said. He said the machine is maintenance and cow friendly and is totally poised for the future.

For more information contact Jochen Döhrling on tel + 49 (0) 5195 / 9605-10 or e-mail jdoehring@lely.com DMA

In-container pasteurising solution for the small-scale dairy farmer



- Produce up to 1000 litres per day?
- Need to add value to your product?
- Want to make LOTS more profit?

THEN USE THE MILK-PRO SYSTEM



Dairy farmers in 44 countries worldwide already are!

MILK-PRO INTERNATIONAL

www.milk-pro.com
info@milk-pro.com



Phone: +27 (0) 11 566 2022
 Fax: +27 (0) 11 566 2023



A vision for the future

An automatic sort gate can make life easy for cow and operator

by Rykie Visser, export & district sales manager: DeLaval

When dairy producers decide to make a change to their dairy facility, a practical approach would be to consider each facility change as an integrated component of your future dairy operation. A facility master plan is a plan that uses drawings and written documentation to articulate the vision of the future facility. A master plan will show the location of all existing and proposed buildings for the site.

It will also show both existing and future major infrastructure items such as utilities, roads, walkways, etc. Topography needs to be included, so that proper drainage of surface runoff and piped waste can be ensured. Existing and proposed topography also allows for easy calculation of required cut/fill volumes.

Facility master plan

A crucial step is to decide how big an operation should be planned. This question must ultimately

be answered by the producer after much thought and consultation with farm advisors.

Dairy producers should evaluate their site relative to expansion issues and profitability, coupled with future technologies such as on-farm manure treatment systems. In the crystal ball, we will see farmers buying more or perhaps even all of their feed and having manure treatment systems in place, so that they are not as land base-driven as they currently are.

Several cows per hectare could be possible in the future. Incremental expansion variables should focus on:

Cow comfort: New dairy housing shelters need to be designed and positioned for maximum ventilation. Sheds should be maximum-orientated with the prevailing summer winds perpendicular to the sidewall. This allows more opportunity for air to be evenly distributed in the shelter and enhances airflow at the open ridge.

Strive to space structures at least three times the height of the maximum height of the adjacent

building/structure from each other, for example, if the height of the existing structure is 5 m, and a new structure is to be built next to it, move it 3 x 5 = 15 m apart from the existing one. Construct stalls that are properly sized for the group of cows that will be using them, and avoid stall structures that significantly inhibit airflow at cow level.

Ensure that adequate electrical servicing is in place to allow full outfitting of the shed with cooling fans. Sufficient water supply and properly sized delivery pipes are needed to deliver water to drinking stations and evaporative cooling equipment during peak demand periods.

Labour efficiency: Facilities should be designed to minimise the labour required to accomplish all jobs. Design shelters, walkways, and other animal use areas in such a way that caretakers can efficiently move through and between groups of animals or multiple shelters. Install gates and fencing in key locations, so that one caretaker can easily separate cow groups and move individual cows between groups when needed.

Cow flow: Provide adequately sized walkways and crossovers without dead ends in shelters, so that cows are free to walk between feed, water and resting areas. Construct walkways between shelters and the milking centre, so that cows can be efficiently moved to and from the buildings with minimal stress. Do not size it less than 6-7 m in width for large groups or minimum of 4,5 m for smaller groups!

Access for a tractor and trailer is important to lift the odd cow. Allow for easy sorting of targeted cows from their group for observation, treatment, group change, or removal from the facility.

Herd management philosophy: Develop a management plan for each group of cattle on the farm. Only then can facility needs be accurately determined. The number of animals in each management group is a key variable in determining the space that needs to be allocated for that group.

Plan for expansion within each management group, as the size of the overall herd increases. With accurate planning, an area that was once occupied by two management groups, can be transformed for use by a single group while other facilities are being brought on line for another group.

Equipment efficiency: Shelters positioned to maximise ventilation may have other structures adjacently located to maximise equipment efficiency. Feed delivery and push-up equipment can be conveniently used in multiple shelters with strategically located all weather roads. Strive to use minimal equipment to remove and transport manure to storage or treatment areas.

Integrate all traffic: Cow traffic, people traffic, on-farm equipment traffic, and delivery and shipment traffic, all need to be integrated for maximum overall efficiency. Proper management will ensure that important daily traffic patterns are not interrupted during key events throughout the year, such as filling silos. Severe congestion can be avoided by laying out traffic patterns so that they do not overlap on common ground at the same time of use.

Conclusion

Proper planning for any dairy or expansion should be done by professionals who have experience in this business. Make use of reputable dairy companies or dairy construction companies. By doing this, you will ensure a proper, well-organised dairy.



Proper designed stalling to ensure cow comfort with an effective bedding area, is essential

For any further information, please call Rykie Visser at 082 653 0364, or e-mail him at rykie.visser@delaval.com. A complete list of references is also available from the author. **DMA**



A comfortable cow bed

by Rykie Visser, export & district sales manager: DeLaval

Your cow's bedding material and how you manage it, is very important if you want your cows to produce quality milk. A quality environment will ensure quality milk.

Clean, dry, well-bedded stalls will maintain cow cleanliness. It will cause less injury to the cow's teats. Clean and dry bedding will ensure that the teats make contact with a clean area every time a cow lies down. In this way it can also prevent and minimise bacterial growth and may even prevent the transfer of mastitis-causing bacteria to the teat skin.

A comfortable stall bed will help your cows to rest well. We all know that a cow rests about 11 to 12 hours per day, so their resting time HAS to be comfortable for them to produce milk when it is milking time.

Here are some tips to supply your cows with comfortable bedding, that will minimise bacterial growth and keep your cows productive.

Comfort

Provide a dry, soft resting place in which the cows can lie down. A good rubber mat that is specially

designed for this purpose, is recommended. It may seem expensive at first, but it is not expensive to maintain.

Moisture content

Moisture, especially with organic bedding such as straw, wood shavings and sawdust, makes bacteria grow faster and reduces the material life. If you have to use these materials, make sure that it is DRY.

Cleanliness

Choose bedding that will not injure or irritate the skin of the teats or hocks (around the ankles).

Particle size

Particle size refers to how fine or coarse the material is that you are using for bedding. For example, wood shavings are coarse, while sawdust is finer. Materials of very small size such

as fine sawdust, will stick to the skin and teat ends. This means that the skin and teats will be more exposed to bacteria. Cleaning the teats in the parlour, will also take up extra time.

Manage your cow's bedding

Farmers often think that they should cut on labour and bedding costs. However, this is not a good idea as your cows' hygiene, comfort and health will be affected by poor bedding. You can improve your bedding management by making sure of four things:

- Use proper bedding material that is dry and comfortable
- Clean the bedding area regularly, especially the bedding material at the back of the stall. This is the area that is in contact with the teats and can be most contaminated with mastitis bacteria
- Make sure that your stall is not overcrowded. If there are too many cows and the traffic in and out of the stalls is too much, then the bedding will become contaminated with manure, moisture and bacteria more quickly
- Scrape the manure alleys often, as this will lower the level of new mastitis infections.

How to evaluate your bedding management

You can evaluate your own management of your cows' bedding by drawing up a list of questions and checking whether you complete these important tasks every week.

1. Do you clean bed stalls more than once a week? Increasing how often you clean and rake the bedding material in stalls from once per week to three times per week, can improve cow health and will reduce bedding waste.
2. Is wet, contaminated bedding scraped from the back of stalls and replaced with dry bedding at least twice a day?
3. Are manure alleys scraped frequently? These alleys must be scraped three times a day to minimise the amount of stall contamination.

4. If you use manure alley scrapers, or any other ways of mechanical scraping like a small tractor, are they on the correct settings and are they maintained well? Are the alleyways clean after a scraper passed? If you bolt hard rubber strips to the bottom of the alley scrapers, this can enhance their cleaning action. If hard metal blades are used for scraping, you can end up with a surface that is too smooth and too slippery.

Locomotion problems

Locomotion problems are problems that occur when cows have trouble standing, walking or moving. Locomotion means movement. A locomotion score will help you to see whether your bedding surface and other surfaces where cows move, support your cows. They must be able to stand and move comfortably in those areas.

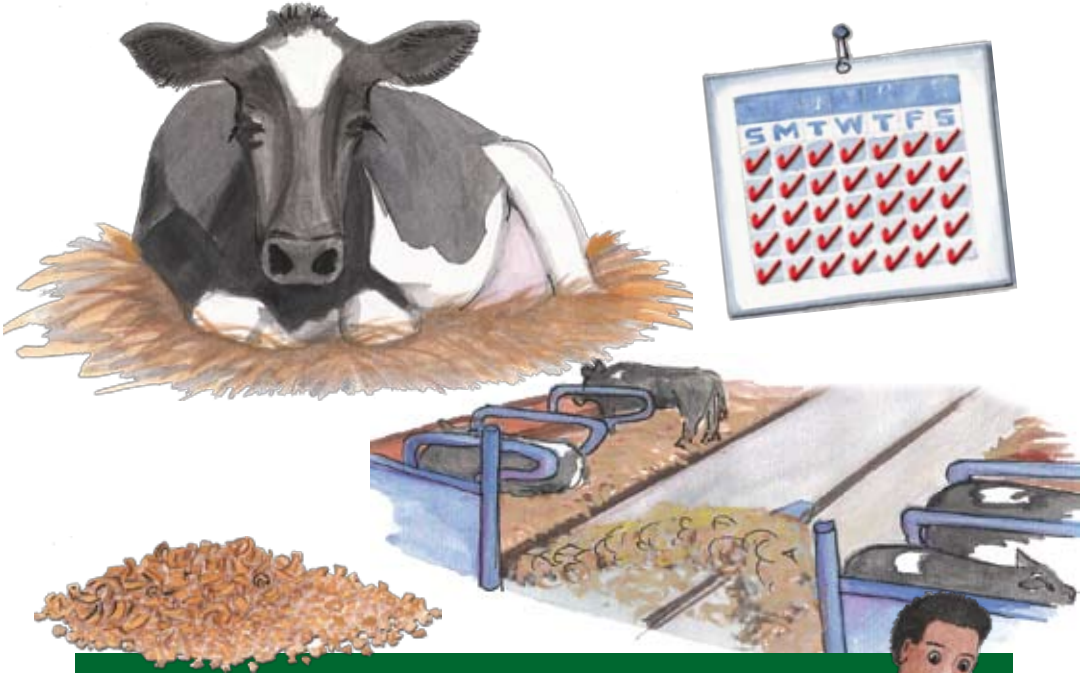
You can do a locomotion score for every cow in the following way:

1. **Normal** – The cow stands and moves normally
2. **Mildly lame** – The cow stands level, but has an arched back when walking
3. **Moderately lame** – The cow has an arched back when standing and walking. Her gait (walking motion) is affected
4. **Lame** – An arched back is always present. The cow prefers to put her weight on at least one specific limb. For example, she may support herself more with the right leg, because the left one is sore.

Cows scoring a 3 or 4, should be considered lame and it would be wise to take another look at their bedding surface. Also check that the alleyways are not too slippery. All surfaces have to be safe so that cows are not injured.

For any further information, please call Rykie Visser at 082 653 0364, or e-mail him at rykie.visser@delaval.com **DMA**

Cow bedding



1

Cows need a soft and dry resting place to lie down. Clean, dry, well-bedded stalls will keep cows clean and cause less injury to the cow's teats.

2

Bedding materials

Rubber mat, straw, wood shavings and sawdust.

3

Keep your cow's bedding area clean and dry

- Replace wet and dirty bedding every day.
- Scrape the manure alleys every day.
- Do not overcrowd.

4

If the alleyways are too smooth and slippery, your cows can be injured and become lame. A lame cow has trouble standing, walking or moving.





A top-class expo

by Liza Burger

Jersey SA's breed director, Poena van Niekerk (middle), announced the winner of the Queen of the Expo competition, the Jersey cow, Omikron Basjan Poppie, displayed by Jan van Niekerk of Springbourne Jerseys. On the right is Wikus van der Merwe, acting technical assistant of Jersey SA

The All Africa Dairy Expo (AADE) attracted top-class service and product providers, giving visitors to the expo good exposure to the latest developments in the fields of animal health, farming implements and all kinds of gizmos and methods to improve dairy farming and processing.

The expo, hosted at the Afri-Dome in Parys in the Free State from 12 to 13 February, lived up to its theme, “Shopping basket for dairy”, with over 50 exhibitors covering all aspects of the dairy industry, farm management and dairy processing.

Although dairy farmers formed the bulk of visitors to the AADE, people interested in the industry as a whole made sure that they visited the expo, especially the stands dedicated to the secondary industry.

Standard Bank jumped at the opportunity to be part of this major event on the dairy calendar, coming on board as the corporate and financial sponsor. The Milk Producers’ Organisation’s membership magazine, *The Dairy Mail*, acted as the main media partner.

“Standard Bank will continue to support the dairy industry through initiatives such as the All Africa Dairy Expo, as part of the bank’s acknowledgement of the significant role that agriculture plays in building a sustainable and thriving economy,” Bertie Smith, director of agricultural banking at Standard Bank, said in the aftermath of the expo.

This year a large number of people attended the various courses presented by the Agricultural Research Council (ARC), the Women’s Agricultural Union (WAU) and Onderstepoort’s Department of Genealogy. The obstetrics course presented by Dr Henry Annandale drew large crowds on both days and equipped attendees with practical information on difficult calvings.

The programme included something for the farmer’s wife as well, with courses on cheese and yoghurt making, meat processing, flower arrangement and table-setting.

The highlight of the AADE was the interbreed Queen of the Expo competition where the Springbourne Jerseys cow, Omikron Basjan Poppie, walked away with the title. Saragosa Ivy 151 of Grace Valley Holsteins came second.



1



2

- 1 More than 2 000 visitors attended the All Africa Dairy Expo in Parys in February, visiting the stands of more than 50 South African and international exhibitors taking part in the display
- 2 Pieter Oosthuizen (sitting on the right) of KK Animal Nutrition, speaking to two dairy farmers visiting the stand at the All Africa Dairy Expo

Three princesses were also crowned in the following classes:

Heifer younger than two years

1. Audhumla Sabers Melkmuis – Springbourne Jerseys
2. Midan Igor C Bella – Anton Smit (Dairy Swiss)

Junior cow younger than four years

1. Omikron Basjan Poppie – Springbourne Jerseys
2. Grace Valley H517 Talent Kari – Grace Valley Holsteins

Senior cow older than four years

1. Saragosa Ivy 151 – Grace Valley Holsteins
2. Alsreg Starbuck Elmzy – Boebie van Rensburg (Dairy Swiss). **DMA**



Starting to feel the heat?

Is the east African dairy industry going to survive after the economic partnership (EPA) agreement with the European Union (EU)? The EU envisions the EPA to be a reciprocal trade agreement. It plans to open 100% of its market duty free and quota free to its former colonies, including Kenya. In return, the EU is insisting that Kenya and its neighbours open 90% of their markets.

What will happen to the dairy industry? Will this lead to another deluge of EU milk powder into Kenya?

As a result of the World Bank's structural adjustment programmes, the dairy sector was liberalised in 1992. Tariffs were lowered to 25% and the Kenya Cooperative Creameries (KCC) was abolished. Private traders were allowed to operate in the sector.

And then disaster struck as milk powder flooded the Kenyan market. The milk came from a variety of sources, including New Zealand, South Africa and Zimbabwe, but the EU was the predominant

exporter. Powdered milk imports rose from 48 tons in 1990 to 2 500 tons by the end of the decade. In fresh milk equivalent, this presented an increase from 400 000 litres to 21 million litres.

The local industry collapsed. Prices dropped way below production costs. Domestic production fell by nearly 70%, reaching a meagre 126 000 tons in 1998. Small dairy farmers numbering some 600 000 people, were plunged into poverty.

In 2001, the government increased the tariff from 25 to 35%. But even this was insufficient to stem another episode of import surge in 2001.

Following much public debate, tariffs were raised to 60% in March 2002.

The KCC was reinstated in 2003 and since then, locally produced and processed dairy products have increased substantially, regaining their majority share in the domestic market.

What will happen to the dairy sector if Kenya liberalises as per the EPA? Despite the claims of “free market” competition, the EU subsidises its dairy sector to the tune of €2,5 billion a year.

Kenya is not the only country that has been badly affected by the export of artificially cheap European milk powder. In Jamaica, imported European milk powder devastated the sector. In the Dominican Republic, 10 000 farmers have been forced out of the sector in the last two decades. From Bangladesh to Nigeria and the Ivory Coast, artificially cheap European milk squeezes small producers out of their local market.

“Powdered milk imports rose from 48 tons in 1990 to 2 500 tons by the end of the decade”

The last reform of the EU's Common Agricultural Policy (CAP) in 2003, did little to correct the distortions in the dairy sector. The reform meant that export refunds in the milk sector are being scrapped and domestic prices are being brought in line with world prices. However, EU farmers are now compensated through direct payments (labelled a new form of hidden export subsidisation).

It is projected that in France, the CAP reform is likely to push small French farmers out. Nevertheless, their production quotas will be taken over by the big producers and the quantity produced for 2007 is expected to be even higher than in 2003.

Kenya and its regional partners have asked the EU to reduce its domestic and export supports to agriculture in the context of the EPA negotiations. The EU has flatly refused to even discuss the issue, arguing that domestic supports are an “internal” issue.

This is untenable, given that the African market is being targeted as a major market for Europe's subsidised milk products.

Between 1996 and 2003, even as EU dairy exports to the world market decreased by 0,44%, dairy exports to African, Caribbean and Pacific (ACP) countries grew by 32,8%. The ACP market accounts for about 14% of total EU dairy exports, and Africa absorbs the largest share.

If Kenya eliminates tariffs on milk in the EPA negotiations, Kenyan milk farmers will be plunged into their nightmare of the 1990s. Kenya may choose to protect milk tariffs in the EPA negotiations by classifying milk powder under the sensitive products list.

However, the EU is pushing Kenya and its partners to limit the sensitive product list for the region to a meagre 10% of all goods currently imported into their countries from Europe. If milk is protected, another sector in industry or agriculture will be sacrificed. Which one will it be?

(Source: IPS News) DMA

Milkplan
FARMING TECHNOLOGIES
& MILK COOLING TANKS
MANUFACTURER

we are looking for distributors / dealers in your area

T/F 0030 2394020400
E-mail : [welcome@milplan.com](mailto:welcomemilplan.com)
Web site : www.milkplan.gr, GREECE.

Keeping milk **cool** in Kenya

The East Africa Dairy Development Project (EADD) is set to spend Sh10 million in the establishment of cooling plants for farmers a press statement said. The initiative to be unveiled in April this year, will see farmers being organised into small groups to establish these cooling plants at selected localities.

The participating farmers are expected to pay an average Sh1 400 for the project, with the balance of three million shillings going to be provided by the sponsor.

Between 3 000 and 5 000 farmers are targeted for each facility, which costs about Sh10 million to set up. EADD has set aside \$42,8 million for the market outreach programme with 13 centres planned for Kenya. Another 17 centres will be set up in Rwanda and Uganda.

The EADD grants, channelled through Heifer International by the Bill and Melinda Gates Foundation, aim at assisting rural households engaged in dairy farming to produce and market their milk more profitably. Beneficiaries will be drawn from families living on parcels of land ranging from one to three hectares.

Farmers will also be trained in animal nutrition to improve milk quality and how to manage the cooling plants profitably. Feasibility studies to identify the best sites for the collection centres, have started in Rwanda.

In Kenya the search has been hampered by post-election violence that has made some areas difficult to access, says Alex Kirui, country

programme director for Kenya. Central and Rift Valley are the main areas targeted for the project.

"Each centre will employ a minimum of 13 people, as well as provide income opportunities to young people who make milk deliveries using bicycles and donkeys," says Kirui.

Heifer International has been in Kenya since 1981 with its most notable project being giving livestock on loan to poor families, who repay by giving away the first offspring to another family in need.

The company has supported cooling plants in Malindi, Nyandarua, Nandi, Kericho and Bomet. Under the envisaged grant, each cooling centre, handling 15 000 litres of milk daily, will be registered as a limited liability company owned 70:30 by farmers and Heifer International, respectively.

"Where farmers are unable to raise their share of the required capital we top up their contribution and recoup their share, with interest, from subsequent milk sales," says Kirui. Ultimately the farmers buy out Heifer International to fully own the project. **DMA**



Anatech installs the Bentley BactoCount

Bacterial counting is one of the important analyses done to determine the hygienic quality of raw milk received directly from the farmer. Conventional bacterial counting is time consuming and it takes days before a result is available. Rapid and accurate bacterial enumeration is essential to provide a rapid and reliable service for farmers and milk buyers.

Lactolab recently invested in the Bentley BactoCount to enable them to provide customers with reliable results on the same day. Lactolab's main focus is the analyses of raw milk for milk buyers as well as analyses for milk recording purposes. Their services include a wide range of tests for the whole spectrum of analysis for the Dairy Standard Agency.

With around 120 000 samples per month, automation in their SANAS accredited lab is essential. The Bentley BactoCount is fast and accurate and the International Standard Method is used to determine the bacterial count in raw milk.

According to Lactolab's manager, Riaan Lombaard, the BactoCount is a sophisticated instrument that is easy to use. The instrument has a low-maintenance design and after extensive training in Minnesota, USA, the Lactolab staff is capable of providing the quality service their customers require.

Bentley Instruments specialises in the development and manufacturing of analytical instruments

for milk and milk products. Their range of products include somatic cell counters and equipment for component analysis.

The BactoCount is a fully automated instrument that uses flow cytometry for rapid bacterial counting in raw milk, capable of analysing 50-150 samples per hour. The high processing speed ensures fast and reliable results.

As the representative of Bentley Instruments, Anatech Instruments have been providing analytical solutions to customers for more than 25 years in southern Africa. We have been serving the food & beverage industry and various other industries with a range of quality analytical equipment. Our range includes equipment and consumables for water analysis, chromatography and microbiological products.

ANATECH
ANALYTICAL TECHNOLOGY

For more information on the BactoCount and other products, contact Menno van den Oever at Anatech Instruments:

E-mail Sales@anatech.co.za
Tel 011 462 6776
Fax 011 704 6490