



PNG'S only DAIRY

Raw milk fresh from the farm

Gemma King

Morobe Province but in the whole of PNG. It was founded in cooperation with the Swiss Evangelical Brotherhood Mission who, after building a bible school six miles (9.7km) outside of Lae, realised they needed a steady flow of income to help fund the school. With their strong connection to Switzerland, which is considered to produce the world's highest quality of milk, it's no surprise they decided to start milk production.

Farm manager Albert Kish is in charge of the operation; a Christian from a mixed heritage of Chimbu and Jiwaka, Albert has been working at 6 Mile Farm for six years, living on the property with his wife and daughter, and very kindly gave me a tour. Standing among the manicured lawns, well-kept gardens and tidy houses, it's hard to believe you are so close to Lae town and it's no wonder Albert has no desire to leave.

The farm has 60 dairy cows, of which 50 are milked twice-a-day – morning and afternoon – yielding up to 300 litres daily. It's a fairly straightforward process; after the milk has been taken by machine from the cow, it's poured manually through a filter then transferred to a large cooling tank where it stays overnight. When the milk has reached the optimal 4°C temperature, it's brought to a small room at the back of the store for packing into plastic containers, then sold for K3.25 for 375ml, K6.25 for one litre or K10 for two litres. The average price for a one-litre-carton of imported UHT milk is between K4.80 and K5.83, depending on the brand.

It didn't take me long to discover that every local supermarket is heavily stocked with this 'long-life milk', unsurprising given the tropical climate and the high percentage of the population who live without the luxury of a refrigerator.

When I learned that my husband, who grew up in Lae, used to go with his mother to collect fresh milk for the family once a week from a farm 'just outside of town', I was keen to find out if it still existed and if I, too, could buy fresh milk to have at home.

To my delight, I learned that the 6 Mile Dairy Farm, established by the Evangelical Brotherhood Church of PNG in 1976, is still very much in operation and stands today as the only producer of dairy products not just in

Amy Benson, 5, of Lae loves the creamier taste of fresh milk and looks forward to an ice-cold drink as soon as she gets home from school

Growing up in the United Kingdom, which is ranked within the top 20 countries listed by milk consumption-per-capita, I continued to drink fresh milk past my early childhood years into adulthood. One way or another, to cool a cup of tea, with cereal, to cook with, or to dunk a biscuit into during my university days, fresh milk has always been part of my diet. At least until I moved to PNG. During visits to Lae on holidays before taking the plunge to move here permanently two years ago, I found fresh milk wasn't presented with the rest of breakfast. Instead, a carton of UHT was offered when asked if I took my coffee white. I had heard of ultra-high-temperature milk but never had a reason to drink



Feeding time for some of the farm's 200-strong herd of dairy cattle

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From calves to mature animals, Albert has a herd of about 200 head grazing on the 50-hectare farm.

The first cows were shipped from Australia but now the farm breeds its own through artificial insemination. Sourcing bull semen from Australia is a far cheaper exercise than buying and importing live stock and it's not profitable for the farm to own a herd bull. The last breeding program took place in 2010 and the next is planned for 2016. Albert works closely with rice distributor Trukai Industries to source and buy semen; Trukai has its own cattle and together, the two businesses can order bigger quantities at a more affordable price.

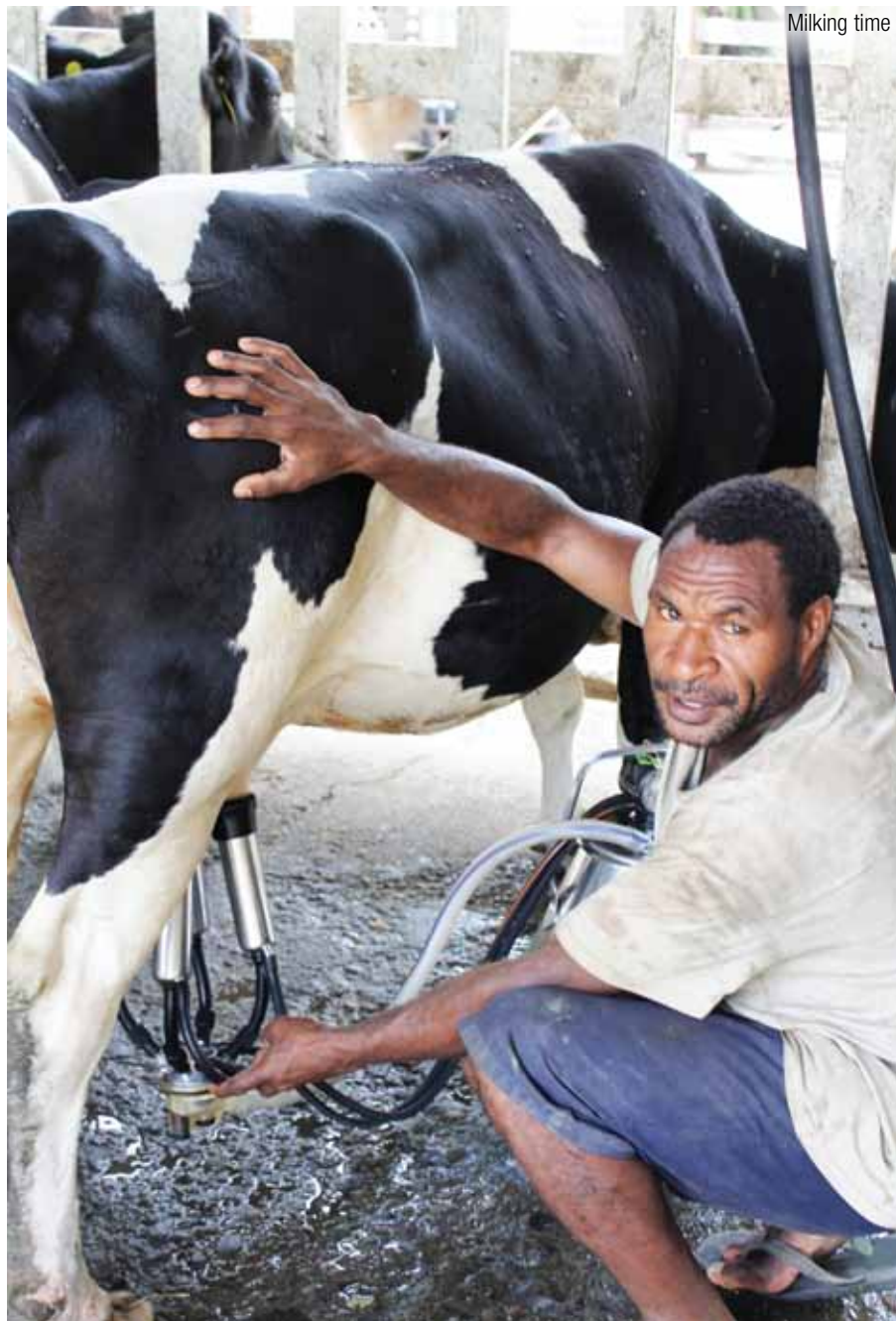
The semen is stored in a straw and frozen in liquid nitrogen before being transported in a small tank. Once defrosted, the straw is carefully cut at the end to allow semen to feed into a syringe that is then used to fertilise

the cow. "We are lucky to work with Trukai," Albert says. "If you want to buy only 50 (straws of) semen, the cost for freight goes up. This is by far the simplest way to get more cows pregnant and we want to use the best cow and bull. The cows and bulls in Queensland can withstand the similar tropical conditions here so it's the best way." Albert is continually upgrading his paddocks with new pasture because the native grass is of poor quality, which can affect the quality of milk produced. "The cows have to be in good condition with no disease to produce good milk so they need good pasture and plenty of water," he says. Any vaccinations for the cows are imported from overseas. After witnessing how healthy the cows look grazing on new pasture, and seeing for myself how clean and well-kept the machinery is, I have no issue with the quality of the farm's operation from a hygiene point of view. What is important to note however is that the milk sold from 6 Mile Farm is not pasteurised. In other words, it's raw. In some countries raw milk is banned altogether, in others you can legally buy raw milk direct from a farmer but you wouldn't find it in your local supermarket. The reason for this is the risk of disease associated with drinking unpasteurised milk; regulatory bodies around the world say pathogens from

raw milk can include tuberculosis, diphtheria and typhoid. After digging deeper into the raw versus pasteurised debate, I learn there are people worldwide who believe raw milk is more nutritious and has more flavour. Only recently, the *Washington Post* reported on the increasing popularity of raw milk driven by enthusiasts and anti-regulation libertarians. Any controversy over raw milk is clearly not so much of a concern for Papua New Guineans. Demand for fresh 6 Mile Farm milk has increased over the years, and just last year a Port



The farm turnoff on the Highland Highway, about 10km out of Lae



Moresby-based company approached Albert about making a regular weekly order of 200l of fresh milk to sell in the nation's capital. Unfortunately the farm's small size and lack of government assistance means it simply cannot meet that sort of demand outside the Lae area.

"We cannot supply that, it is just not possible," Albert says. "The milk is not pasteurised so the lifespan is shorter, too. Some people come from the Highlands, they leave their eskies in the morning for us to fill up and they pick them up later in the day on their way back home; we know the milk travels a bit of distance but we can't transport that ourselves."

The farm makes just enough money to fund itself, its school, and its staff. "The school relies on the farm, we don't like to receive funds from other people and we don't get anything from the government or the Department of Agriculture," says Albert. "It's all too political; we don't want to be involved with politics."

Chocolate milk is the biggest seller, followed closely by regular milk and the farm's other products of eggs, cream and yoghurt. There are no plans to expand the business, with Albert content to continue trading to a capacity the staff can cope with.

"Our priority is to supply to our local walk-in customers and to the supermarkets and hotels in town. It is not our aim to make more business but to support the church," he says. I asked Albert that if demand for fresh milk was so high and there was clearly an opportunity in the PNG market for a dairy farm, then why was nobody else doing it? "It all comes down to a lack of knowledge in the dairy industry," he told me. "Basically people take on what they know, especially with agriculture. Dairy farming is not the type of farming that people in PNG practise or have

practised for generations. Cows were introduced primarily for beef." As dairy cattle don't like the heat, it's not hard to conclude that Lae's tropical climate is not ideal for milk production. Higher temperatures reduce the milk yield and slow weight gain in dairy cows.

"Dairy farming is more suitable in the Highlands," Albert says. "For us, there is a higher cost involved to keep the cows healthy enough to produce a decent amount. We, in fact, need higher volumes to make the operation worthwhile. You also have to be more careful on the health side of things. This is a challenge."

PNG's National Agriculture Quarantine and Inspection Authority carry out routine checks and an annual inspection of the farm to ensure it meets the required standards to continue as a commercial operation.

Every day Albert and his team deliver milk, eggs, cream and yoghurt to local supermarkets, hotels, restaurants and smaller trade stores.

To make yoghurt, milk is heated to a temperature of 85°C then cooled to around 49°C. Active culture (good bacteria) is added to the cooled milk with a little dry milk powder then placed in a special heater kept at 38°C, where it stays for 7-10 hours. The final stage is to cool the yoghurt to 4°C, ready for packaging. The farm takes advantage of its good connections with Switzerland by sourcing new parts or repairs from its friends there if vital equipment such as the heater breaks down.

As a cheese lover, I was naturally keen to know if this is something the farm has considered producing. Albert's answer is short: "With cheese, it's a very long process and we don't have the expertise." On a brighter note, icecream-making is a simpler process and something we might be seeing on the shelves in the future.

In the early days, before dairy cows were introduced, the Swiss generated income from chickens and eggs. With 4000 layers, eggs are still a big seller at both wholesale and retail level, but chicken meat sales have been on hold since the arrival into the market of much bigger players Zenag and Tablebirds.



"...Thieves use weapons to cause damage to the livestock and the property. This is a big challenge for us..."

The farm is in talks with Tablebirds, however, to become one of its suppliers. Another sideline for the farm is pork, with the meat sold by live weight or a pig can be slaughtered into quarters on request. Pigs are mainly bought by local customers and can cost from K900 to K1300 per head. As is PNG customary tradition, pigs are very valuable and used in exchange for a bride, the cost often reaching up to a dozen pigs. "In PNG we like pig, we like big pig," Albert says. "We have this custom of bride price and we don't care about the money. If I arrive home to the village with a pig and my brother arrives home with cash money, I am the bigger man. We have customers that come as far as Southern Highlands; one man bought more than 20 pigs, worth more than K1000."

Aside from milk powder for the cows imported from Australia, feed for the animals is made on the farm using food leftovers from local companies such

as Lae Biscuit, Nestle and Trukai. The farm buys bags of their bi-products including rice grain, noodles and corn at an affordable price to be mixed and ground into grain feed. Two large fish tanks are overflowing with tilapia that is also sold direct from the farm. The farm also houses a print shop, which is very handy for labelling the dairy products onsite. The majority of its sales are generated from the print and sale of calendars, psalm books, bibles and other religious texts, on top of small outside orders from local companies.

As with most companies in PNG, one of the farm's biggest challenges is security. Despite employing four men to secure the farm at night, it's not uncommon to lose calves to thieves, find livestock harmed and in some cases, cows slaughtered. Staff have been threatened in the past and their accommodation broken into, not to mention the expense of repairing machinery that has been purposefully damaged.

"They (thieves) use weapons to cause damage to the livestock and the property. This is a big challenge for us," Albert says.

Students come from all over PNG, particularly rural areas, to attend the farm's bible college, living in dorms. They learn Christian education with the sole purpose of graduating as pastors, ready to return to their own villages to put their learning to use. Lessons are taught in the morning, while in the afternoon each student is required to carry out farm duties, from sorting



The farm shop sells religious books and calendars as well as milk, cream, yoghurt and eggs

and packing eggs, tending gardens and general maintenance to cooking and cleaning. "Part of each of our student's education is to engage in farm duties and learn skills in basic farming. Girls learn how to sew and cook," Albert says. "They don't get paid for their duties, it's all part of their schooling but they do get a monthly allowance and all their housing and food, electricity and water." Students are allocated sections of the garden where they can grow herbs, vegetables, bananas and other fruit.

"We get single men and women, couples, and even families living here," Albert says. "They can start from age 18, usually after high school but we accept people up to 35-years-old. We also welcome people from other religions, Catholics, Lutherans etc, not just the Evangelical Brotherhood, and they come from all over the country." The bible college offers a three-year

program, which Albert says is cheaper than other institutions. "We have very good dorms and living standards. They are willing to come to school because after they graduate they become pastors. This is what is important to our students." Christians are also employed to work on the farm from two church feeder schools in the Highlands. These are small village bible schools where students get taught carpentry and basic farming skills as well as religious education. All of the expertise for running the dairy farm comes from overseas. "Fortunately the missionaries are able to advise us on many things," Albert says.

The entire farm is almost 100% self-sufficient, apart from buying local rice and flour. Students and staff eat beef, pork and a small amount of chicken from the farm. Trees on the station are felled and burned for cooking so there is no need for gas or electric ovens.

6 MILE DAIRY FARM

- Located 9.7 km (six miles) from the centre of Lae on the Highlands Highway.
- The store opens Mon – Fri 7.30am – 5.30pm, Sat 7.30am – 12.30pm.
- A tip is to visit in the morning to avoid disappointment for fresh milk, cream and yoghurt! Also on sale are eggs, live pigs, tilapia, coconuts, calendars, bibles and religious books.
- To request a tour, contact Albert on 7939 2101.

Surrounded by coconut trees, the nuts are also harvested and sold to passersby, including in bulk for 40t each to women who sell them at the market for K1 each. The farm has one working tractor, a small workshop for repairing machinery and its own generator – a necessity as a backup to the unreliable local power supply – while water is pumped from underground into a 9000l tank.

Although Albert and his team don't offer official food tastings for visitors, it's worth popping into the store to see where it all happens and to buy products fresh from the farm. Who knows, maybe we'll all be heading out there for an icecream before too long! ▲

Gemma King

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