Jersey—The World's Choice

This is the second of a two-part international roundtable published by the *Jersey Journal* to give readers a better feel for how dairy producers in other parts of the world manage their herds.

The series features Jersey producers from each of the five regions of the World Jersey Cattle Bureau (WJCB). The North American and European regions were included in the April issue. The African, Asia/Oceania and Latin American regions are highlighted in this issue.

Featured Herds

Wayne and Lisa Kuhne, Bushlea Jerseys, Australia: The couple operates Bushlea Jerseys in Leongatha, Victoria, with his parents, Keith and Pat. The Kuhnes milk 400 cows and raise 180-210 heifers at the farm in southern Australia, about 80 miles southeast of Melbourne. The 850-acre farm established in 1945 by Keith's father is operated by the family with the help of one full-time employee. High type and a will to milk have been a hallmark for members of the milking string at Bushlea. Over the years, more than 550 Excellent cows have been bred and milked at Bushlea, along with three Supreme Champions at the International Dairy Week (IDW) and nine Senior Champions at the Melbourne Royal. Bushlea Jerseys has hosted 25 sales on the farm—21 of them in consecutive years. The high seller in 2015 brought $20,000 (Australian) and was just named Intermediate Champion at IDW. The most prominent family is the "Fernleaf" family, which has been a foundation family from the onset and today accounts for half the milking herd.

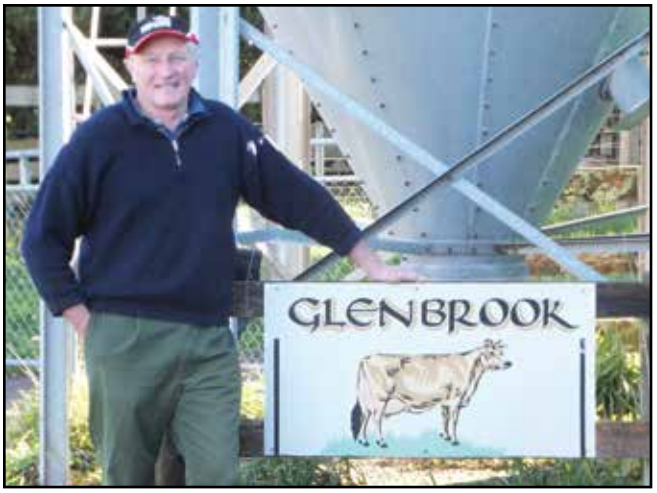
Gonzalo Maldonado, Colombia: Maldonado and his wife, Maria E. Reyes, got into the dairy business in 1978, when she inherited a 10-hectare (about 25 acres) farm in Bogotá. The couple initially milked Holsteins. Jerseys were introduced in 1992 with the importation of six Jersey heifers from Barlass Jerseys in Janesville, Wis. They liked Jerseys so much that they began transitioning the herd to Jersey using Jersey bulls as service sires for their Holstein cows. Today the 90-cow herd is 50% purebred Jersey, 40% Jersey-Holstein crosses (with varying Jersey-Holstein percentages) and 10% Holstein. As is common in Latin America, where herd owners don't work on the farm, Maldonado manages the farm and supervises accounts while a herdsperson and three assistants manage the herd, feed, milk and perform other daily duties. Four horses transport milk in cans from the parlor to the bulk tank, spread manure and take hay to the paddocks. The farm in Ubaté, a small town 50 miles north of Bogatá in a beautiful valley known as the dairy capital of Colombia, has grown to 40 hectares (about 100 acres) with the purchase of additional neighboring land.

Cliff Shearer, Glenbrook Farm, New Zealand: Shearer has operated Glenbrook Farm in Hawera, on the west coast of New Zealand's North Island, singlehandedly for the past dozen years. The herd of Registered Jerseys is about 35 cows and an equal number of heifer calves. The production-bred herd is seasonally calved and rotationally grazed. The farm was settled in the 1860s and been in the ownership of just two families. His parents purchased the farm from the original settlers in 1966. Cliff purchased one-third of the farm (about 35 acres) as bare land from his parents in 1982. He also leases 19 acres as runoff to grow hay and silage and graze some young animals. Over the years, Shearer has built a range of buildings on the farm.

John Walker, Cineraria Jerseys, South Africa: Walker and his wife, Karlien, and their children, Ernie, Christoff and Emma, own Cineraria Jerseys. The Walkers get assistance operating the farm from her brother, Guy Emslie, a senior manager on the farm, his wife, Mariana, and their children, Robert and Anne. Three non-family managers are employed as well. The farm in the Overberg region of the country was purchased by John's father, Cyril, in 1979 as an onion production business and two-cow dairy herd. John started an apple production business in 1991. Today, 40 acres are used for apple production. The dairy herd is the largest in the region, with 1,300 cows and 600 heifers. The farm is 780 acres of arable land, with 200 acres under irrigation. Cineraria Jerseys was on the WJCB tour in 2014, where Jersey breeders viewed daughter groups of several U.S. bulls, including an especially impressive lineup of

The Kuhnes—Lisa, Ruby and Wayne and Keith and Pat—operate Bushlea Jerseys in Australia. The Kuhnes have bred more than 550 Excellents and three Supreme Champions at International Dairy Week, the country's national dairy show.

Gonzalo Maldonado and his wife, Maria E. Reyes, own a Registered Jersey herd in Colombia. They imported half a dozen heifers from Barlass Jerseys and have begun to transition to the Holstein herd to Jersey by breeding their Holstein females to Jersey bulls.



Cliff Shearer has operated Glenbrook Farm in New Zealand single-handedly for the past dozen years. Glenbrook Jerseys broke the country's record for herd average during the 2014-2015 season and hopes to establish a new record this year.

cows sired by Tollenaars Impuls Legal 233-ET, GJPI +101.

Questions

What is the production of your herd?

Kuhne: Production is about 600 kgs. milk solids (about 1,320 lbs.) per cow in 305 days.

Maldonado: Our herd of 90 cows produces about 365,000 liters of milk each year, with component tests of 4.29% fat and 3.32% protein. This equates to about 9,214 lbs. per cow per year. Our average SCC is about 200,000 with CFU levels under 14,000.

Shearer: Glenbrook established a new record for New Zealand's high herd average during the 2014-2015 season with 15,715 lbs. milk, 851 lbs. fat (5.4%) and 662 lbs. protein (4.2%) on 38 cows in 302 days. I'm hoping to exceed that record this season.

Walker: Our average yield per cow per day is about 21 liters

Jersey enthusiasts traveling with the World Jersey Cattle Bureau Conference in South Africa in 2014 saw U.S. genetics at work in herds like Cineraria Jerseys, which featured this group of beautiful-uddered daughters of Tollenaars Impuls Legal 233-ET. Cineraria Jerseys is owned by the Walker family..

African Region

Member: South Africa.

Affiliate Members: Kenya, Zambia, Zimbabwe.

In this region, the most significant populations of Jerseys are in South Africa, with nearly 57,000 registered Jerseys and another 73,000 unregistered Jerseys. Other countries with sizable numbers of Jerseys are Botswana, the Democratic Republic of the Congo, Ethiopia, Kenya, Mozambique, Tanzania, Zambia and Zimbabwe. These countries are primarily near the equator and on the southeast side of the continent. In many other African countries, farmers have found success us-

(continued to page xx)

Asia/Oceania Region

Members: Australia, New Zealand.

Affiliate Member: Japan.

This region accounts for the largest land mass of all the regions in the WJCB and the most potential for Jersey growth. Developing economies in China, India, Pakistan and Vietnam, along with a desire to improve the genetic level of the national dairy herds and milk more sustainable breeds of cattle, offer the Jersey breed tremendous opportunities.

The most significant populations of Jerseys can be found on the two Oceania countries of Australia and New Zealand. For each of these countries, the dairy in-

(continued to page xx)

Latin American Region

Members: Argentina, Brazil, Colombia, Costa Rica, Guatemala.

Associate Members: Chili, Ecuador, Uruguay.

Affiliate Members: Nicaragua, Panama, Venezuela.

In this region, the most organized Jersey groups are in the countries of Argentina, Colombia, Guatemala and Costa Rica, which will host the WJCB meetings in 2017. There is huge potential, though, for Jerseys in Brazil and growing interest in the breed in Mexico, Panama, Salvador and Venezuela.

The Argentine dairy herd is estimated at 2 million cows, with Holsteins accounting for the lion's share of the pie at 80%; Jerseys represent the remaining 20%. Production is based in the east-central

(continued to page xx)

African Region

(continued from page XX)

ing Jerseys to cross with indigenous cattle, especially in rural areas.

African farms are diverse, ranging from one-cow herds established through projects like Heifer International in Rwanda to 3,000-cow dairies in South Africa. The way herds are managed is largely dependent on climate. Differences in climate are more related to rainfall than temperature, as temperatures are consistently high across the continent. Generally speaking, rainfall is lowest in the desert areas in the north, highest in the rainforests near the equator and moderate (15-60 inches annually) in the south.

"In the past few decades, the Jersey breed has increased in numbers and gained popularity in Africa," noted Arno Theron, vice president of the region. "Jerseys have proven to be the best crosses with African cattle as their offspring are of low maintenance and heat tolerant.

"Fertility and calving ease have also contributed to Jersey growth. The breed is very popular with pasture systems as dairy producers can carry more head per acre, and, that results in more production per acre. In non-fluid milk regions, Jerseys are promoted for their advantages for cheese yield."

In South Africa, one of Africa's most developed countries, average herd size is 444 cows. Though Holsteins account for the largest share of the national herd, Jerseys follow closely behind with 40%. Dairies in South Africa range from 3,000 cows on pasture to confinement systems typical of the U.S. The country has a free-market system in which processors determine the price that is paid for milk and is a large exporter of Jersey genetics to other African countries.

"The whole continent of Africa is basically an emerging economy," summed Theron. "Unstable political atmosphere is probably the largest drawback to development. Most African currencies are very weak against the dollar/pound."

"The biggest challenge for dairy producers is cheap imports from countries that subsidize milk production. Dumping from these countries has a huge effect on national prices and puts farmers under pressure."

"As well, the whole southern African region was hit hard by El Nino, causing the worst drought in a century in some areas. This has put immense pressure on commercial and traditional farmers. Corn has to be imported on a large scale and feed prices are at an all-time high."

"In more developed areas, challenges are also coming from consumers, who are increasingly purchasing organic and non-GMO foods and those produced in accordance with animal welfare standards."

Overall, dairy services are more limited in the African region than in other parts of the world, especially Jersey specific services. Jersey South Africa (JSA) offers registration, classification, technical advice based on bi-annual farm visits and mating assistance on request. The organization establishes breed standards for importation of semen and manages the national genetic program. JSA also selects young genotyped bulls for sampling, organizes national shows and qualifies judges for breed shows.

"Long term, I am optimistic for the Jersey breed in Africa," said Theron. "With the escalating population in Africa, the need for protein rich food will be high. Jersey milk is one of the answers."

Asia/Oceania Region

(continued from page XX)

dustry is a huge export earner and services for dairy producers—and Jersey breeders specifically—are advanced and widely available. While supplementary feeding with grains is becoming increasingly common, the dairy industries in both counties remain predominantly pasture-based.

The national dairy herd of Australia is 1.74 million cows, with an average herd size of 284 cows. Holstein is the predominant breed at 65%; Jerseys account for 13.2% of the national dairy herd. Ayrshire, Brown Swiss, Holstein/Jersey crosses and the two local breeds, Australian Red and Illawarra, are also milked. The most dominant dairy states in the country are New South Wales and Victoria.

Australia utilizes 31% of its milk production for cheese, 27% for skim milk powder and butter and 25% for fluid milk. The country exports 34% of its production and ranks fourth in total dairy trade volume with 6% of world market share.

Milk pricing was deregulated in Australia in July 2000. Today, dairy farmers operate in a completely deregulated environment where international prices are a major factor in determining milk price. Australian dairy producers typically receive a low milk price by world standards, so have to operate very efficient production systems.

Dairy Australia is the national service body for dairy farmers and the dairy industry. It is funded by a combination of levies (based on fat and protein production per kilogram), government and leveraged funds. Dairy Australia invests in programs such as the Australian Dairy Herd Improvement Scheme (ADHIS) and the Dairy Futures Co-operative Research Center (CRC) to help producers manage their herds. Among the tools ADHIS provides are the Good Bulls Guide, which compares bulls by breed without regard to marketing company or country of origin, and Australian Breeding Values (ABV) for cows for 40 different traits.

Australia is the first country in the world to provide a feed efficiency breeding value based on real feed intake. The Feed Saved ABV is a collaborative effort, an eight-year project that measured feed intake of almost 2,000 heifers in Australia and New Zealand and combined it with genomic results from the Netherlands and the United Kingdom. The dairy industry in Australia is pushing to get more females genotyped so additional genetic tools can be made available.

Jersey Australia has about 550 members and registered nearly 25,000 animals in 2014. The organization classified nearly 6,700 cows. Jersey genomic data was boosted largely from research projects funded by Dairy CRC and Dairy Australia.

In New Zealand, there are about 800,000 Jerseys (J14 and above), which accounts for 10-12% of the national dairy herd. Holstein-Friesian and kiwi-crosses (Holstein-Friesian x Jersey) are the predominate animals. Smaller numbers of Ayrshires and Milking Shorthorns are also milked. Most farms are family owned and continue to increase in size, with an average today of more than 400 cows. Many families own multiple farms.

A huge chunk—95%—of New Zealand's milk production is exported, mostly as commodities. While there are no quotas, Fonterra, the largest purchaser of milk at 85%, requires dairy

(continued to page xx)

Asia/Oceania Region

(continued from page XX)

farmers to hold one share per kilogram of milk solids produced. Other co-operatives also have shareholding requirements; independents do not. Dairy producers are paid separately for fat and protein and assessed a volume charge for transportation and input costs. Prices are also adjusted based a supply curve for world production.

"Though Jersey numbers are not increasing as such in New Zealand, there is light at the end of the tunnel," said Ross Riddell, president of Jersey New Zealand (JNZ). "Kiwi-cross semen is the biggest seller right now, so the Jersey portion of the national dairy herd is increasing. As well, Jersey sires are ranking well on the country's Ranking of Sires list (a list of breeding values for all bulls regardless of breed), so demand for purebred Jersey sires should grow as well."

JNZ offers registration, classification and cattle marketing services, manages a young bull program and JerseyGenome (an elite heifer program to identify dams for A.I. bulls) and lobbies the government on behalf of Jersey producers.

"As with dairy producers across the globe, New Zealand dairy producers are facing many challenges," continued Riddell. "Because most of our milk is sold in a depressed world market, we are battling low milk prices. Following that are environmental issues and compliance regulations and charges."

"While the present conditions are difficult, we are optimistic about the longer term future of the industry and the Jersey breed in particular. We expect dairy producers here to follow the trend that has been seen around the world, with increased interest in the Jersey breed."

Latin American Region

(continued from page XX)

try known as the Pampas, where dairy farming is primarily pasture-based. The fertile plains are ideal for growing crops, so milk production competes with soybean, corn and wheat production.

Argentina exports 15-25% of its milk production each year and is the third largest exporter of whole milk powder. To stabilize export income, Argentina is seeking to capitalize on the opportunity to supply the Russian market with cheese after it announced it is banning food imports from the U.S., the European Union (EU), Australia and Canada as part of the diplomatic dispute over the Ukraine.

Milk prices in Argentina are typically erratic because of recurrent cycles of over and undersupply of milk and unstable economic policies. As well, the inflation rate currently stands at 35%, which creates monumental operational struggles for dairy farmers.

In spite of these challenges, there is growing interest in Jerseys because of their fertility and calving ease advantages. The importation of Jersey semen has grown in recent years, as have sales of Jersey herd bulls. Several dairies across the country are participating in a three-year study to compare the production and reproduction of purebred Jerseys versus crossbreds. The Argentinian dairy industry is also working to further develop genetic tools.

The national dairy herd of Colombia is 1.5 million cows, primarily Holstein. Jerseys have been crossbred with Holsteins, Brown Swiss, Simmentals and Santa Gergrudis, as well as native breeds such as Harton, Lucerna and San Martinero. Eighty percent of the dairies are small, subsistence farms with 10-20 cows; another 17% have 50-100 cows. Because it is relatively expensive to produce milk in Colombia, the country is an importer of dairy products.

Since its founding in 1981, the Colombian Jersey Breeders Association (CJBA) has registered 25,579 animals (17,564 purebred females, 3,182 crossbred females, 1,659 males and 3,174 first, second and third generation founder cows). The organization classifies about 1,600 cows and sponsors three exhibitions and two sales each year. In an effort to improve production, the association is working with 22 pilot farms through the government-funded National Program for Bovine Genetic Improvement to monitor milk yield, fat and protein percentage and somatic cell count. The CJBA is also working to consolidate production data from all regions so overall performance of the Jersey breed can be analyzed.

Costa Rica is home to an estimated 50,000 purebred Jerseys in 200 herds. The first Jerseys were imported in 1873 from California; additional Jerseys were imported from Kentucky in 1880. Costa Rica is the only self-sufficient country in milk production in the Caribbean Basin.

The Costa Rican Jersey association registers cattle, classifies and provides herd management information. A key strategy for promotion of the breed is field days, which are well-attended by producers across the country. The association has also been participating in an initiative to systematically identify Jerseys that perform well in the Costa Rican environment, as a base to improve the genetic level of the national Jersey herd.

With 19 million cows, Brazil ranks third in the world for herd size. It ranks fourth for production, with 34.8 million tons of energy corrected milk each year. The Brazilian dairy industry is based mainly on pasture-oriented, dual purpose cattle (*B. taurus* x *B. indicus* hybrid animals). In spite of its sheer volume of production, Brazil imports dairy products on a major level to support domestic demand.

The portable milking parlor comes to the cows in the Maldonado herd in Colombia rather than cows coming to the parlor. The parlor is typically moved once every three days. A team of four horses moves milk in cans from the parlor to the bulk tank.

(about 47.7 lbs.) of milk. Half the cows are on a full-feed, total mixed ration (TMR) system and the balance are on pastures. Our average 305-day yields across all cows are 7,702 liters (17,498 lbs.) milk, 325 liters (738 lbs.) fat and 262 liters (595 lbs.) protein, with tests of 4.6% fat and 3.7% protein.

Describe your milking facilities.

Kuhne: We milk in a double-20, rapid-exit parlor with automatic take-offs.

Maldonado: Our milking set-up is very different from those typically used in the U.S. We move the parlor to the cows rather than bringing the cows to the parlor. We milk in a one-row, side-by-side, eight-position portable parlor that we move through the paddocks every third day or so.

Shearer: I milk in an eight-bail (stall), walk-through cowshed that I built in 1982. It is a very old-fashioned, but functional set-up. Though they were common years ago, there are few left in New Zealand today.

Walker: We use a 60-point carousel Rockwood table and Waikato milking system with the Afimilk herd management system.

Describe your housing facilities for milking cows.

Kuhne: Cows are kept on pasture year 'round.

Maldonado: Cows are grazed year 'round. Since temperatures here range from 8-25° C (46-77° F) and we have two, three-month rainy seasons and two, three-month dry seasons, there is no need for other facilities.

Shearer: Cows are on pasture 365 days a year.

Walker: All our cows and heifers are kept on pasture. We do not have inclement weather so there is no need for housing facilities.

Describe the ration for your milking cows.

Kuhne: Cows are on pasture and fed a partial mixed ration (PMR) in varying amounts based on grass availability. The 120 hectares (about 300 acres) of pasture is annual rye grass that is sown each fall. The PMR is homegrown silage and hay and a purchased higher-protein hay. At this point, our 330 cows are consuming 2,500 kilos (5,500 lbs.) silage; 1,200 kilos (2,640 lbs.) alfalfa; 600 kilos (1,320 lbs.) oat hay; 1,000 kilos (2,200 lbs.) barley pellets and 4 kilos (8.8 lbs.) of high-protein pellets in the parlor.

Bushlea Brook Maybell, EX 94, was twice named Supreme Champion of International Dairy Week, Australia's national show, for Bushlea Jerseys. She is one of more than 550 Excellents bred at Bushlea Jerseys over the past seven decades.

Maldonado: Cows are grazed year on pastures that are a mix of Kikuyugrass (dense, aggressive perennial native to East Africa), rye and clover. We supplement the grass with a grain mix, hay, corn silage and haylage that is produced on the farm. The amount of the grain mix (17% protein, sorghum, corn silage, sesame meal and by-products of wheat, rice and cottonseed) that is fed is based on production and stage of lactation. Cows fresh to three months post-calving receive 1 kilogram/3 liters of production per day; cows 3-6 months into their lactation receive 1 kilogram/4 liters of production; cows in the last three months of their lactation receive 1 kilogram.

Shearer: I feed my cows as much as they can eat. They are rotated every day on one-acre pastures. Since I am highly stocked, with more than two cows per acre, I supplement the grass ration. When grass growth is less than optimal (about eight months a year), the milking cows also get a little bit of hay every day along with some grass silage. Each cow is also fed 20 lbs. of custom pellets in the cowshed during milking.

The pellet includes dried distillers grains (DDG), barley, palm kernel, corn and molasses. The pellet had included cottonseed until June 2015, when it became too expensive to import. At that point, the cottonseed was replaced with DDG.

I also feed the milking cows a mix of DDG, palm kernel extract (PKE) and molasses in bunks in the paddock every day. The amount and ingredient percentages vary with the seasons. Cows typically consume anywhere from 6 lbs. a day to a maximum 20 lbs. a day, when there is no grass. Most of the year, the percentages are 60% DDG, 30% PKE and 10% molasses.

Walker: The TMR cows are fed a mixture of silage (corn or oats depending on the season), with some straw, alfalfa and concentrates. Most of the year, we also supply dried apple pulp in the ration. The pasture cows will graze on either Kikuyugrass, annual rye grass or perennial grass clover mixtures.

Do you grow your own feed or purchase it? Or do you grow some and purchase some?

Kuhne: We grow all our own silage, dry cow hay and heifer hay. Some years, hay is purchased for the milking cows.

Maldonado: For our paddocks, we grow Kikuyugrass and a mix of clover and rye grass that is replanted every two years over the Kikuyugrass. Corn silage and Pangola-grass hay (also called digit grass) is purchased.

Shearer: I grow my own grass silage and hay on the land I lease. The goal is to make enough so additional feed doesn't need to be purchased. Because summers have been very dry the last few years, some additional silage and hay has been purchased. The custom pellets fed in the parlor and mix fed in pasture bunks are purchased as well.

Walker: We try to produce our own roughages and only purchase the high-protein concentrate from our feed manufacturer.

Describe your housing facilities for your heifers.

Kuhne: Heifers are raised on pasture.

Maldonado: Just like the cows, our heifers are grazed year 'round.

Shearer: Heifers are on pasture 365 days a year.

Walker: Calves are raised in separate pens in a housing facility until they are about eight weeks old. They are then moved to another housing facility where they are raised in small groups until they are six months old.

Describe your newborn calf practices.

Kuhne: Newborns are fed colostrum twice a day for a minimum of a week (typically two weeks) and raised in individual pens. They are then moved into a large shed and fed whole milk once a day until they are 11 weeks old. Capacity for the shed is 80 head.

Maldonado: Calves are housed in 22 portable hutches that are similar to the milking parlor system. They are raised in the hutches from day three through day 120, with hutches moved every 15 days. Calves are fed colostrum during the first three days and then Jersey liquid milk, which is increased to four liters per day, until they are 90-days-old. Calf starter is introduced in small quantities from the earliest days and increased to two kilos per day until they are 120-days-old. Water is always available, as is Pangola hay. Calves are dewormed every two months.

With seasonal weather all year long, there is no need for facilities for the Maldonado herd in Colombia. Jerseys are perfect converters of the abundant grass to protein-dense food.

Walker: Newborn calves are separated from their dams at birth. Dams are brought to the newborn facility before milking for five days post-calving so their calves can suckle. Calves will then nurse a surrogate and be given some pellets, which will be gradually increased to weaning.

Do you feed milk replacer? If so, is it special for Jerseys?

Kuhne: No.

Maldonado: No.

Shearer: No.

Walker: Yes, we use Blossom Easymix from Volac. It is not breed specific, but we mix it with water in a ratio that is more nutrient-dense for Jerseys.

Do you have a healthy market for newborn bull calves?

Kuhne: Yes. Newborn calves are sold to the abattoirs (slaughterhouse) when they are seven days old for $15-30 per calf.

Maldonado: Newborn bull calves are sold to a butcher when they are four days old.

Shearer: No, there is not a healthy market here for bull calves. Most years they are essentially given away.

Walker: Unfortunately, we do not have a market for them.

Describe your herd health practices.

Kuhne: Calves are vaccinated with seven-in-one Pestigard for BVD and wormed every five weeks for the first 12 months. Heifers are also vaccinated with Pestigard and wormed on the same schedule as calves. Milking cows are vaccinated with Pestigard once a year and wormed as well. The veterinarian is called as necessary.

Maldonado: We vaccinate calves for life after they are three months-of-age with Strain 19 for brucellosis. We also vaccinate with CattleMaster 4 Plus every 11 months to prevent IBR, BVD, P13 and BRSV and

Heifers on pasture at Cineraria Jerseys in South Africa.

an injection for foot and mouth disease every six months. We have routine veterinary checks once a month.

Shearer: The only vaccination I use is a once-a-year Lepto jab. Because veterinary costs are so high, it's very rare that a vet is on the farm; we do not have routine checks. Cows and heifers are outside 365 days a year, so they tend to be very healthy. A blanket approach is taken for dry cow treatments, with every cow treated at the end of her lactation. Magnesium oxide is added to the pellet mix fed in the parlor every day. Pastures used by springing and fresh cows are dusted with magnesium oxide and dolomite every day to prevent milk fever.

Walker: Our veterinary visits are every two weeks, primarily for post-partum checks and pregnancy diagnosis. The vet will also tend to any sick animals.

Our vaccination protocol consists of vaccinations against BVD, botulism, brucellosis, clostridium, E-coli, gall sickness (Anaplasmosis), IBR, lumpy skin disease, red water disease and Rift Valley fever.

At what age/weight do you begin to breed heifers?

Kuhne: 14-16 months-of-age.

Maldonado: 17 months-of-age.

Shearer: Breeding times are age-based because I manage a seasonal herd. I have just two, six-week mating cycles each year. So, I am mating animals just 12 weeks per year, from June through October. Heifers are mated to calve at 24 months-of-age.

Walker: We start breeding our heifers from 60-65% of mature weight around 14-15 months-of-age.

What is your average age at first calving?

Kuhne: 22-24 months-of-age.

Maldonado: 29 months-of-age.

Shearer: 24 months-of-age.

Walker: 26 months-of-age.

John Walker, left, owns Cineraria Jerseys, established by his father, Cyril Walker, right, in 1979. Though now retired, Cyril visits the farm regularly and continues to guide management decisions.

What is your calving interval?

Kuhne: We are a seasonal, split calving herd, with about 200 calvings in February/March and then another 200 calvings in August/September.

Maldonado: 14.2 months.

Shearer: The aim is 365 days. But, because we are a seasonal supply country, this is not a statistic that is tracked.

Walker: 407 days.

What traits are most important for selection of service sires?

Kuhne: Overall type and mammary traits.

Maldonado: Milk, protein, fat, udder, strength and legs.

Shearer: Fertility. My first priority is to get cows and heifers in-calf. I generally run more than one bull with each line of yearlings to ensure this and then DNA the resulting heifer calves to verify parentage.

Walker: We place great emphasis on milk solids and fertility. We also try to maintain a genetically-diverse herd and are especially mindful of the inbreeding coefficients of expected progeny.

What bulls are you currently using as service sires?

Kuhne: All Lynns Louie Valentino-ET, GJPI +129; Galaxies Celebrity-ET, GJPI +64; and Bushlea Maverick 2, sired by Tower Vue Prime Tequila-ET, GJPI -171, and out of Bushlea Brook Maybell, EX 94, from Semex. Another new bull at Semex we will use heavily this year is Bushlea PN Viral, a son of Hawarden Impuls Premier, GJPI +63, out of Arethusa On Time Vogue-ET. He is owned in partnership with Rob and Julie Eby of Pleasant Nook Jerseys, Ayr, Ont., and has an LPI over +2,000 and is 15 for conformation and 14 for mammary.

Maldonado: "Tequila," All Lynns Restore Vito-ET, GJPI +126; Evangelo Del Primero, GJPI +83; Heartland Fastrack Thor-ET, GJPI +88; and Shot of Nat Anthem-P-ET, GJPI +108.

Shearer: I use line-bred bulls from my own herd to run with yearling heifers, so I get what I consider to be valuable calves. My whole herd descends from a cow I purchased in 1980 and has been mostly line-bred back to sires from that family over the past 20 years.

Walker: We have used the following bulls during the past year: ISDK VJ Hilario, GJPI +180; ISDK VJ Husky, GJPI +131; ISDK VJ Link, GJPI +140; ISDK VJ Lure, GJPI +139; and Sunset Canyon Dimension-ET, GJPI +105.

Have you used U.S. genetics? If so, what bulls are most influential in your herd?

Kuhne: Yes. We used A-Nine Top Brass, GJPI -173, way back along and have also used Forest Glen Avery Action-ET, GJPI +2, Highland Duncan Lester, GJPI -109, and SHF Centurion Sultan, GJPI -2.

Maldonado: Yes. We have used Lester Venture Peregrine, GJPI -63; Molly Brook Berretta Future-ET, GJPI -43; O.F. Mannix Rebel-ET, GJPI +28; Sil-Mist Blair

The milking cows at Glenbrook Farm in New Zealand are pastured year 'round. The grass diet is supplemented with a grain mix.

Fath Lincoln-ET, GJPI +92; and Sil-Mist Montana Blair 3753-ET, GJPI +21.

Shearer: Yes, I was the first breeder in New Zealand to milk daughters of "Top Brass" and J. S. Quicksilver Royal, GJPI -118, when imports from the U.S. were permitted in the early 1980s. After I read the *Jersey Journal* for a few years and was given an opportunity to use these bulls, I grabbed it. "Royal" in particular had a massive effect on my herd's breeding. The current herd is heavily bred back to him even today.

I used several other U.S. bulls in the 1980s as well and have used an occasional bull with very good effect in the years since. In particular, BW Finalist, GJPI -85, produced the outstanding Glenbrook Final Cosma (VG) for me. She currently holds the two highest milk records in New Zealand breed history among all cows, regardless of age, with a high record of 5-0 305 28,872 3.7% 1,067 3.3% 966.

Walker: Yes, we used U.S. sires heavily in the past and this is the reason we are now using so many Danish sires. The most influential bulls we used were "Celebrity," Highland Duncan Lester, GJPI -109, Rock Ella Paramount-ET, GJPI +5, and Windy Willow Montana Jace, GJPI +35.

Do you consider genomic evaluations for sires? If so, why?

Kuhne: Yes. We use genomic evaluations as a tool because they include all information.

Maldonado: Yes, because we believe the data in genomic evaluations is sufficiently reliable.

Schearer: No. Genomic information is not freely available in New Zealand yet, and is not available at all for dairy breeders.

Walker: We do consider genomic evaluations as these typically are bulls with higher genetic merit (newer genetics) than proven bulls. However, we still use proven bulls because we have found many proven sires that improve our herd exponentially. We will use either a proven bull or a genomic bull, depending on what the mating merits.

Have you genotyped your animals? If so, how do you use genomic evaluations to manage females?

Kuhne: We have genotyped just a few animals to get information for mating decisions. However, we plan to do more genotyping in the future.

Maldonado: No.

Shearer: No. That option is not available in New Zealand; there is not yet opportunity to genotype females.

Walker: Recently, we started to identify bull calves to raise and market as breeding sires for A.I. and herd bulls for other dairy producers. We sort the most promising bulls based on expected breeding values (from sires and dams) and then genotype them to increase the accuracy of their breeding values. We emphasize milk solids and fertility and maintain other traits.

Describe your milk marketing situation.

Kuhne: We ship milk to Parmalat and are paid per kilo of protein and fat. Milk is picked up daily at the farm. There is no on-farm processing in Australia. The price dairy farmers are paid for their milk varies greatly depending on the location of the farm and the time of year it is produced.

Glenbrook Final Cosma, VG, a member of the milking string at Glenbrook Farm in New Zealand, holds the two highest milk records in breed history with a best record of 28,872 lbs. milk, 1,067 lbs. fat and 966 lbs. protein at 5-0. She is sired by the U.S. bull, BW Finalist.

Maldonado: The farmgate milk price is calculated on grams of protein and fat, with a bonus for low somatic cell counts under 400,000. Final price is about 40 cents (U.S.) per liter. Milk is picked up at the farm daily and we are paid weekly. There are no quotas.

Shearer: All milk is supplied to New Zealand's largest dairy company, Fonterra. We are required to purchase one share for every kilogram of milk solids (fat and protein) supplied. Currently shares are trading at $5-75 (New Zealand) per kilogram. Payout predictions for the 2015-2016 season are $3-90 per kilogram, plus a dividend of 40 cents per share.

Walker: We ship unpasteurized milk to our milk buyer, who processes it into cheese and butter (no fresh milk).

Do you sell cattle? If so, how many head do you sell each year? Are the sales private treaty to other dairy producers or consignment sales, or both?

Kunhe: Yes. We sell anywhere from 5-50 females each year. We have hosted 25 sales at the farm over the past 70 years; 21 of the sales were consecutive years. We have typically sold 30-50 head from Bushlea Jerseys at each event, with some sales including guest consignors as well. The top seller from our November 2015 sale, Bushlea Galaxy Fernleaf, brought $20,000 and was just named Intermediate Champion of IDW for her new owners in January.

Maldonado: Yes. We sell about 20 heifers and five milking cows every year, primarily to other dairy producers.

Shearer: I don't merchandise at this time, but would like to.

Walker: We do sell some of our own bulls and also pregnant heifers. This amounts to about 100 head each year, primarily as private treaty.

Do you sell bulls as herd sires to other dairy producers?

Kunhe: Yes. We sell about 80 bulls each year to dairy producers.

Maldonado: We do sell herd bulls on occasion, but not on a regular basis.

Shearer: No.

Walker: Yes, on occasion.

How much do cattle sales contribute to your farm income each year?

Kuhne: Up to 20-25%.

Maldonado: 30%.

Shearer: None as such. But cull cows bring in a certain amount of income.

Walker: 5%.

Why do you milk Jerseys rather than another breed of dairy cow?

Kuhne: Jersey is the breed we've always had and there's been no need to change.

Maldonado: Jerseys are very docile and their production level (liters per hectare) is similar to Holsteins. Their milk solids content gives us a 20% better income than other breeds.

Shearer: Jersey is the most efficient breed. They produce the most milk per pound of feed consumed as compared to any other breed. They are capable of very high production and have outstanding fertility and temperament. And, I may be biased, but I think Jerseys are also the most beautiful breed of cow.

Walker: Jersey cows are well adapted to our environment. We have extremely high summer temperatures and the pasture animals have to walk long distances to the

parlor. Our milk buyer manufactures cheese and butter from our milk and the Jersey breed is ideal for this situation.

What items make your farm most profitable?

Kuhne: Protein yield and feed efficiency. As well, demand for a good Jersey show cow or heifer has grown substantially in the past 2-3 years. This is great for our business. It seems everyone wants a good Jersey.

Maldonado: Milk yield, reproduction, feed efficiency and low input costs associated with grazing.

Shearer: Milk solids, very high production per cow, good fertility, low health costs, good temperament. Our cows are very efficient at converting available feed to milk.

Walker: Our highest income comes from fat and protein yields, feed efficiency and reproduction. Also, the fact that we produce most of our roughage on the farm contributes greatly to profitability.

What programs and services do you use from your national Jersey organization?

Kuhne: We use many services offered by Jersey Australia, including classification. We routinely access information that is available online (primarily download of up-to-date pedigrees).

Maldonado: The programs available to us in Colombia are very similar to those offered in the U.S. We register and appraise our cattle and use cattle marketing services from the Jersey association. We also participate in the production program which maintains data for milk yield, fat and protein test, total milk solids and somatic cell count. The association recently published its first genetic evaluations with support of the Colombian government.

Shearer: I use most of the services available from Jersey New Zealand—registration, classification and the Semex On Farm Challenge (national contest in which teams of animals are judged on the farm). I also advertise occasionally in the breed magazine, Jersey Review, and enjoy membership in my local club, the Hawera Jersey Club, and all the activities it offers during the year.

Walker: We participate in official milk recording. This provides us much of the information we use to manage the herd. We also use genetic evaluations to assist us with sire selection and mating.

Describe your methods for permanently identifying your animals.

Kuhne: Our method of permanent identification is ear tags.

Maldonado: We are using tattoos in the ears and microchip tagging as mandated in Colombia as part of the national identification system.

Bushlea Galaxie Fernleaf 4 was the high seller of the 25th anniversary Bushlea Sale in 2015 at $20,000 (Australian). She was named Intermediate Champion of International Dairy Week for her new owners in January 2016.

Shearer: Every calf has a brass tag put in its ear at birth. They are also fitted with a National Animal Identification and Tracing RFID tag for life as well as another identifying ear tag. They must be registered at birth with MINDA (national animal database) and then registered with a pedigree name with Jersey New Zealand once a year.

Walker: All of our animals are permanently tattooed in the ear. We also use ear tags and pedometers so production and feed intake can be monitored and animals managed with the Afimilk system.

Why is registration important?

Kuhne: It adds value to our herd and a historical record of our animals. Buyers are then able to access information about the herd online.

Maldonado: Registration is important to certify the purity of animals. It helps us determine how our crosses are performing (relative to percentage Jersey and Holstein). It also adds value to the selling price of animals and helps us better raise and manage the herd.

Shearer: It is an important part of ancestry record keeping and very useful for proving sires and finding the best dams in a herd. It is also important for tracking cow families. And, in the case of breeders who line breed cattle like me, ancestry information is paramount for determining herd bulls.

Walker: We feel that it is important to keep records of animals and provide this information to a national database so it can be used for record keeping, research and genetic evaluations. This helps us develop new farming practices and benchmarks to compare herds.