Welcome/Farm History

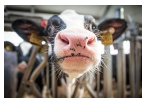
Speaker: Ralph Dornacker

Welcome! I'm Ralph Dornacker, a 4th generation dairy farmer here at Dornacker Prairie Acres. I farm along with my son, Allen. We are a family-owned dairy farm. My ancestors came from Germany and started farming here in 1863. Through the years, many additions and improvements have been made to the farm. In the original barn the cows were milked by hand. Then we put in a pipeline to pump milk to the cooler. In 1980, we built a milking parlor. Four years ago we built the robotic milking barn that you see here today.

Currently we milk about 280 cows and work 1,000 acres of land. The milk from our farm is shipped to Cedar Valley Cheese for making Italian cheese.

Milk is still one of the most wholesome and nutritious drinks. Cheese and yogurt supply you with lots of protein and let's not forget my favorite dairy product, ice cream.

Thank you for taking the time to celebrate June dairy month with us!



Station 1: Hoof Trimming

Speaker: Nancy Dornacker

Tour: Brian Verhasselt, BV Hoof Care

Hi again, it's Nancy Dornacker. We hire a hoof trimmer to come in every 6 months. This is a very important part of our animal health. Our hoof trimmer "Brian" trims the inner and outer claws for proper balance of the foot and corrects any overgrown claws and or lesions in their feet. This prevents lameness and keeps the animal from pain in her feet.

Station 2: Nutritionist

Speaker: Nancy Dornacker

Diets designed specifically for them.

Hi! This is Nancy, Allen's wife. We work with a nutritionist on our farm. Our cows are fed a diet formulated specifically for them. The diet is called a TMR (total mix ration). It's like a large "cow salad" with all the nutrients they need. It contains: haylage, corn silage, ground corn, soybean meal, cottonseed and minerals. We use a 550 cubic foot sized mixer, kind of like your kitchen aid mixer except it has wheels to deliver their feed directly in front of the cows at a feed bunk.

Most of the feed is sourced locally from our fields and stored in "bunkers" as corn silage or haylage. Corn silage or haylage means the whole plant is cut up and put in an oxygen tight feed pile that is covered with plastic and tires to keep the pile of feed air tight; like canning your vegetables. The oxygenless fermentation process in the bunker allows for good bacteria to multiply and provides stable, year-round storage.

Dry corn and soybeans are stored in the gray bins near our bunkers and are then crushed so it is more digestible. The corn gives them energy and the hay is like lettuce. They also get vitamins and minerals mixed into their "salad". Our nutritionist visits every other week to help prepare their recipes for the next 2 weeks. The nutritionist creates a "recipe" for each group of animals (for example, cows that had a calf, pregnant and young heifers).

You will see bins near the edge of the robot barn. They contain feed in a "pellet" form that has a sweet coating called molasses. The cows like this and enjoy coming to the robots to eat the pellets. The amount of energy in the feed at the bunk gets adjusted for the energy they eat with the pellet by the robot.

Each cow eats up to 120 pounds per day and drinks 30-40 gallons per day (which is about a bathtub full of water). We use a robotic feed pusher that runs every 2 hours to push feed in the feed alley close to them.

Station 3: Cow Comfort

Speaker: Jack Dornacker

Animals deserve kindness and good care.

Hi! This is Jack Dornacker, son of Allen & Nancy. The barn is where I spend most of my time helping on our farm.

Every part of this barn was engineered with the cow in mind.

We have a warm barn that has curtains for winter and fans for summer. The cows are free to lay down where they want; we call these “freestalls”. They are laying on sand like you’d find on a beach. They have 24/7 access to clean water and food. Twice a day we clean and fluff the sand in the freestalls. They have brushes to scratch their backs and lay down 12-15 hours per day.

A cow’s body temperature runs over 100 degrees. All that body heat amongst fellow cows helps keep them warm in winter and in summer the fans and opened curtains bring in fresh air. They drink a bathtub full of water each day and have 7 places in the barn to access water.

Notice the “necklace” on the cows necks. It monitors their activities like getting up to eat, laying down and standing. It also monitors their “rumination”. The rumination is the movement of the cow’s stomach. The tag picks up the sounds of her stomach and measures how well her digestive system is working.

Station 4: Agriculture Technology

Speaker: Kate Dornacker

Hello, it’s Kate Dornacker; I’m the 6th generation and just finished 8th grade at Slinger Middle School. I’m going to explain some of the technology we use here on the farm.

Here you can see our 3 robotic milkers. Things have come a long way over the years at our farm from hand milking to a milking machine and then the parlor. The only thing missing was the automatic attachment of the teat cups… and now we have that. The robotic milker takes over as the “eyes, hands, and partly brains” of the milker. This system has 5 main categories.

The first is the milking stall; where the cow enters and uses an electronic ID reading system. NEDAP technology, the same as in road tollways, is used. The reader tells if the cow should be milked or not. The stall also has a pellet “candy like” dispenser to make the cow’s visit more attractive and the gating system controls where the cow goes after she is milked!

Second is the teat-cleaning system. This important system cleans the teats to remove dirt and other particles that could contaminate the milk or be spread from cow to cow. If you look close, you will see the soft brushes cleansing the teats.

Third is the teat detection system. Udder shape and teat position will be different between cows. There is a laser on the milking arm that scans her udder and detects where the teats are. This gets stored in a database to make it more consistent and quicker for the next milking.

Fourth is the robotic arm. The arm follows an infrared 3D camera that detects where she is standing in the stall. When the cow moves, the arm detects where the cow is going and has a hinging system consisting of 2 gas springs that gives way for the arm to move.

Fifth is the control system and sensors. The sensors are the 'eyes'. They monitor cow identification, teat cup attachment, vacuum level and the milk process. They monitor the quality of the milk and send an alert to us if it detects a health issue with the cow, her milk or the robot. It gathers all the analytics like how much milk she gave, feed intake, activity and body weight. All of this is sent to a database where we can record and track the cow history to help us make decisions.

You will also see a "Juno". It is our feed pusher that runs every 2 hours by following a metal plate in the concrete. After every run it gets charged at the charging station.

In our fields we use GPS to help plant and drive our tractors. The system helps us variably apply seed and fertilizer.

Station 5: Veterinarian

Speaker: Kate Dornacker

A doctor appointment every week.

Hi! My name is Kate Dornacker. I am the oldest daughter of Allen & Nancy. Most of my time helping on the farm is in the barn with the cows.

Our veterinarian visits once a week to do herd checks for pregnancy and any health issues. The "vet" uses an ultrasound machine to check if the animal is pregnant. The ultrasound also helps address any issues the calf may have before it is born; a common one being twins. Sometimes the veterinarian does surgeries. They also check our younger animals for any health issues and prescribe medicine.

Veterinarians are a highly valued part of our farm team. Our "vet" helps create a herd health plan. Each week they visit we produce a list of animals from our system that need to be checked for pregnancy, calving status, vaccinations and any general health issues. Sometimes they make recommendations on adjustments in the barn for ventilation or cow comfort depending on what health conditions they find; especially in March and October; with the weather swings in Wisconsin. They also may look at their "hooves" or feet and recommend trimming or their feet might indicate a health condition.

They make sure we use medicines appropriately. Sometimes antibiotics are used to treat an infection. When that happens we enter this into our system and the milking robot will "dump" the milk from that cow down the drain until the medicine residue period has passed.

Station 6: Maternity Area

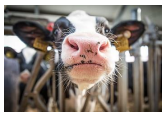
Speaker: Anna Dornacker

Mother's deserve comfort.

Welcome! This is Anna Dornacker. I help in the barn with chores and one of them is feeding newborn calves; here in our maternity pen!

It all starts with the maternity pens. We have one large maternity pen where cows go when they are about to have a calf (baby). Fresh bedding is put into each pen after each birth to ensure no disease is transmitted and the area is clean. Once the calf is born, the mother cow receives a 5 gallon bucket of water and is milked. Her colostrum is fed to her calf within an hour. This helps ensure a healthy start to that calf.

We move the cow into this pen 1 month out from her due date. This allows her to get used to the pen; therefore reducing her stress. The cow also has the option for privacy at the end of the barn with her own pen. We will move her to the private pen when her "necklace" collar tells us her level of rumination and activity has dropped.



Station 7: Robotic Milking Viewing Area

Speaker: Adam Dornacker

Cows milked on their "own time".

Thanks for visiting! I'm Adam Dornacker. I just finished 5th grade at St. Peter's Catholic School. My family decided to put robotic milking in our new barn back in 2018.

Less stress and more choice works best for our cows. Robotic technology reduces stress and keeps the ladies in the barn healthier. They are wearing a "necklace" collar with NEDAP technology (like what is used in tollways). It's like a cow "fitbit". When she walks in the robot, we know who she is. Based on that, she gets fed a certain amount of pellets depending on her lactation stage and milk production. The pellets are part of her balanced diet.

The robot arm comes in to clean and disinfect her udder before it comes in to attach the milking unit. The position at which the cups attach is already known by the robot based on how she was milked in the past. There is an infrared camera that detects her body heat and where she is standing in the milk stall. The robot arm moves to the reading of this position and milks her there and follows her if she moves in the milk stall.

It takes about 6-7 minutes to milk a cow. The NEDAP technology in her collar collects data on her 24/7 and we can tell the amount and quality of milk produced, the frequency of visits to the robotic milker, how much each cow has eaten and even the number of steps each cow has taken per day. All of these metrics help us determine a cow's overall health status. Sometimes the cow may end up on a "herd check" report for the veterinarian to review.

Station 8: Milk Cooler

Speaker: Nancy Dornacker

Cooling delivers a safe and quality product.

HI! This is Nancy Dornacker, Allen's wife.

After milking, it is important to cool the milk as quickly as possible. Milk comes out of a cow at 101.5 degrees and it goes through a stainless steel pipe, through a filter and then into a plate cooler. The plate cooler uses our well water to cool the milk down within the hour to 38 degrees. This is the optimum temperature to hold the milk without freezing it. The water that passed through the plate cooler gets reused; it is run back out to the cows for drinking.

The milk is held in our 6,700 gallon milk tank until a refrigerated truck comes to haul it to Cedar Valley Cheese. Within 48 hours or less the milk at Cedar Valley Cheese is pasteurized and made into cheese. We deliver 2,750 gallons of milk each day to Cedar Valley Cheese… that makes about 2,200 pounds of cheese each day!

Station 9: Manure Pit

Speaker: Adam Dornacker

The land, air and water are important on our farm.

Hi! This is Adam. I'm the youngest son of Allen & Nancy. One of my favorite jobs is helping Dad and our custom haulers empty the manure pit in spring and fall.

We drink the water and breath the air here. We live here and we care about everybody on the farm as much as we do about our cows and our community. We have a pit that holds 3.6 million gallons of liquid manure. This is the best natural fertilizer for our crops. We pump this out 2 times a year on the fields when the crops need the nutrients from the manure. It gets pumped into a 5,600 gallon manure tanker or a custom operator comes with a hose and pumps it to the fields. The manure has a lot of nutrients that help our crops grow. Plants thrive on NPK (nitrogran, phosphorus and potassium) and manure delivers this. Healthy crops with high nutrient value means the best meal for our cows.

Station 10: Environmental Stewardship

Speaker: Allen Dornacker

Take care of the land and it will take care of you.

Hi! It's Allen Dornacker again. I manage the crops here.

Sustainability is our goal. At our farm we contribute to a sustainable food system. We recycle our manure by spreading it back on our land to help conserve the soil and fertilize our crops. The liquid manure is spread back onto the fields.

We grow cover crops on most land and compost our dry manure. Cover crops are planted to hold the nutrients in the ground until we plant the main crop for cattle feed. Cover crops are rye, peas and oats and radishes.

Composting helps with water infiltration and reduces runoff. Composting builds soil structure with less need for commercial fertilizer. Most of our bedded pack or dry manure (calf, steer and maternity pen) is turned into compost. We put the dry manure on piles and wait for about a month. We then turn it to give it oxygen which is like giving a fire fuel to burn hotter. The heat and pressure decompose it. When the top of the pile gets below 110 degrees we then turn it and give it air. We turn it about 6 times. After this it stops heating and is ready to be spread onto the field. This feeds the soil "bugs" and keeps it loose for the water to infiltrate the soil and keep the plant healthier.

We also choose a no-till conservation practice on over half of our land. This reduces the amount of nutrients that leave our fields through runoff from heavy rain events. In addition to benefiting the land, this reduces our expenditures on tractor fuel and saves on labor.

Station 11: Calf Care

Speaker: Nancy Dornacker

Mother's milk is best

Hi! It's Nancy Dornacker again. Welcome to the calf barn!

When a cow has a calf we bring the calves over here to our calf barn. They get fed 1 gallon twice a day; morning and afternoon and have access to water at all times. We feed them whole milk from our cows that has been pasteurized to ensure they receive the highest quality nutrition. They are on milk for 7-9 weeks until they are weaned and show they can eat grain on their own.

They are placed in an individual pen/hutch for safety and health reasons. They practice social distance so they don't get each other sick from viral pneumonia pathogens. We only use antibiotics as needed; for example, treating pneumonia.

To keep them comfortable hutches are bedded with straw three times a week. In the winter they get a "coat" to wear and we place doors in the front of the hutches to keep them warm. We believe in low tech-high quality calf care to ensure we have the healthiest calves.

After they are weaned from milk and eating grain/hay they are considered a "heifer", which means a female that is growing and hasn't had a calf yet. We keep the heifers together with their same age group so they can progress socially.