

**Interreg**

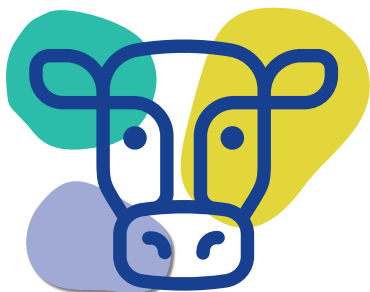


Co-funded by  
the European Union

North-West Europe

HoliCow

# THE HOLICOW PROJECT 2023-2027



## OUR PILOT FARMS



# About HoliCow



HoliCow was born from the observation of a dramatic decrease in the number of small and medium-sized dairy farms in our territories.

*Twenty years ago, there were ten farms in my commune in the hills 20 miles south of Caen. There are now only four farms in the commune. One of the remaining farmers will retire this year.*

*The local*



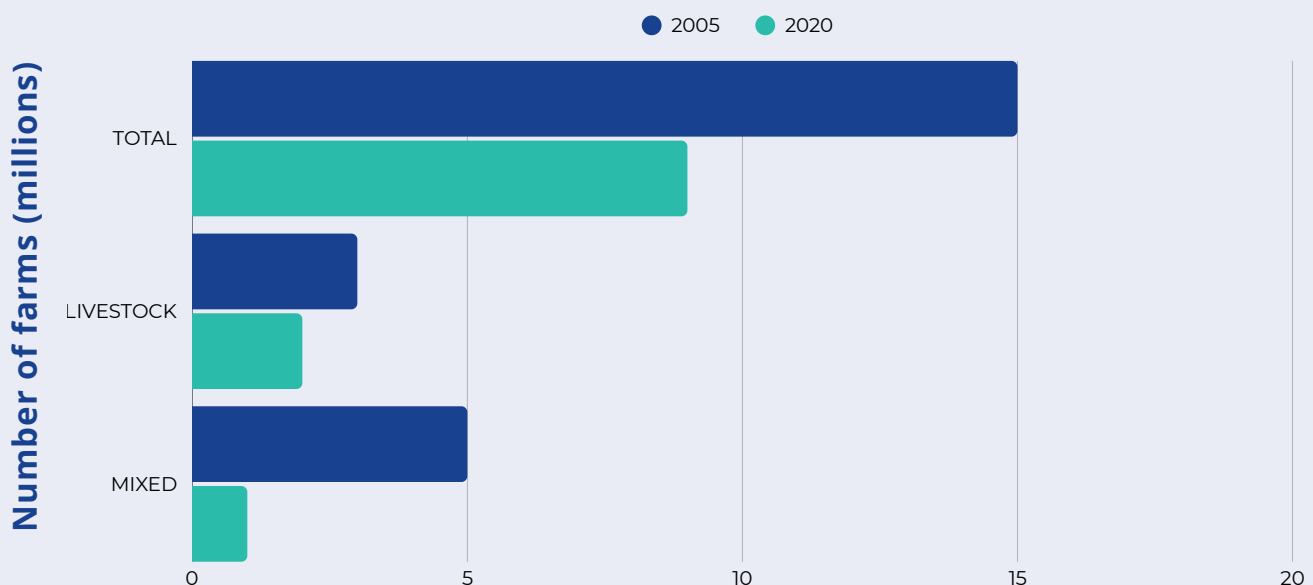
This decrease is multifactorial.

First, access to technologies is complicated for these farms because of the investment and time needed to understand them. This can lead to economic losses and lower resilience of the animals and farmers who do not work with technology.

A second reason for the decrease of farm number is the detrimental opinion of the general public. Indeed, agri-bashing is very common nowadays, discouraging farmers to

continue their activities. Given the importance of these farms to maintain our landscapes, biodiversity and the resilience of our communities, HoliCow partners decided to join forces to allow these farms to use affordable tools to improve their resilience and stay in business. In addition, a promotional campaign is planned to strengthen the relationship of the farmers and their local community. This project is co-financed by the Interreg North-West Europe (NWE) programme and the Walloon Region.

## Evolution of the number of farms (Eurostat)



# Our mission

The HoliCow project follows on from a previous project, *HappyMoo*, which enabled the creation of new prediction equations for animal welfare **thanks to mid-infrared spectroscopy of the milk**.

Concretely, the partners previously achieved to predict **biomarkers related to health, welfare, chronic stress and other traits using milk composition analysis** on the samples continuously collected by Milk Recording Organisations (MROs).

All these predictions are now being gathered to create an **easy-to-understand indicator** to assess farm resilience. To achieve these ambitious goals, an action plan has been established and is currently taking place until June 2027.

The first phase (WP1) consists in developing an easy-to-use tool designed for farmers thanks to the data collected by MROs, as well as the data coming from previous projects (e.g; HappyMoo). We want to allow farmers to see at a glance **how their herd is doing** in terms of heat stress, fertility, production, transformation, welfare and environmental impact. By collecting direct feedback from the users, a community database will also be created.

The second phase of the HoliCow project (WP2) should allow us to create and perfect this tool in close collaboration with the breeders.



HEALTH AND WELFARE



HEAT STRESS



FERTILITY



MILK TRANSFORMATION



PRODUCTION



ENVIRONMENTAL IMPACT

**An app or online platform, including an intuitive community database, are some considered ideas.** Thanks to the help of pilot farms, these new tools will be in tune with the reality of farmers.

During the final phase (WP3), we want to **establish a real dialogue between farmers and citizens** and to create a bond between the farms and their local communities thanks to a **broad communication campaign**. Activities such as open farm days will also be organized in order to bring closer the citizen and their local dairy farms.

More generally, HoliCow is part of the Interreg NWE approach of building more resilient communities and of preserving our landscapes.

# Why this booklet?

The HoliCow project brings together **12 partners across six European countries**, supported by two associated partners, with a shared ambition: to better support dairy farmers through innovation, collaboration, and recognition of their expertise. Our project's greatest strength is the commitment of its scientific researchers, who are dedicated to working hand in hand with the field, collaborating with one another as well as with farmers.



To ensure the tool we are developing truly meets farmers' needs and reflects on-farm realities, we work in close collaboration with a network of pilot farms in each partner country. **These farms play a key role in testing, validating, and improving the tool throughout its development**, ensuring its relevance, accuracy, and practical value.

Beyond their technical contribution, pilot farms are also invited to take part in the project's communication activities. This is an essential dimension of HoliCow. One of the project's goals is to give greater value to the farming profession and **to promote a positive, realistic image of livestock farming** at a time when farmers are increasingly exposed to criticism and agri-bashing.

Through this booklet, we want to **highlight the diversity of dairy farms** involved in HoliCow. There is no single system: dairy farming takes many forms, shaped by local contexts, choices, and values. Rather than opposing production systems, the project embraces this diversity and seeks to show it to the public in a balanced and constructive way.

**This booklet is therefore more than a presentation of our pilot farms**, it is an opportunity to showcase the people behind the project, the richness of their practices, and the essential role they play in building the future of dairy farming.



# OUR FARMS IN IRELAND



Ireland boasts the longest grass-growing season in Europe. Its location on the western edge of the continent, combined with a temperate climate and abundant rainfall, allows for year-round grass growth without the need for irrigation—an advantage few countries can claim.

Ireland spans approximately 6.9 million hectares, with 64% of this land dedicated to agricultural use. Of that, 81% consists of pasture, hay, or silage grassland. This extensive permanent pasture serves as a valuable carbon store, supporting environmental sustainability.

Many Irish dairy farmers also implement multi-species swards, enhancing biodiversity and promoting both plant and animal health.



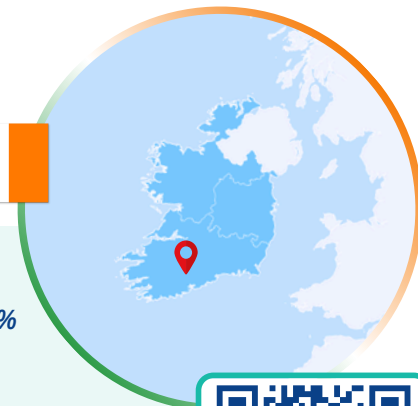


Between 2017 and 2023, Ireland's dairy cow population grew steadily. In 2017, the national herd stood at approximately 1.3 million cows, increasing to 1.5 million by 2023. This growth reflects the ongoing expansion and strength of Ireland's dairy industry. Holstein Friesian is the most popular breed in Ireland, followed by Jersey cows.

In 2024, domestic milk production in Ireland was estimated at 8.43 billion litres—a slight decrease of 30.6 million litres, or 0.4%, compared to 2023. In 2024, Irish dairy exports were valued at approximately €6.3 billion, with over 1.6 million tonnes of dairy product exports to approximately 140 markets worldwide. The EU and the UK remain Ireland's largest markets.



# THE CURTINS FARM



Tony Byrne



58.71 ha, grassland 100%



Fermoy, County Cork, Ireland



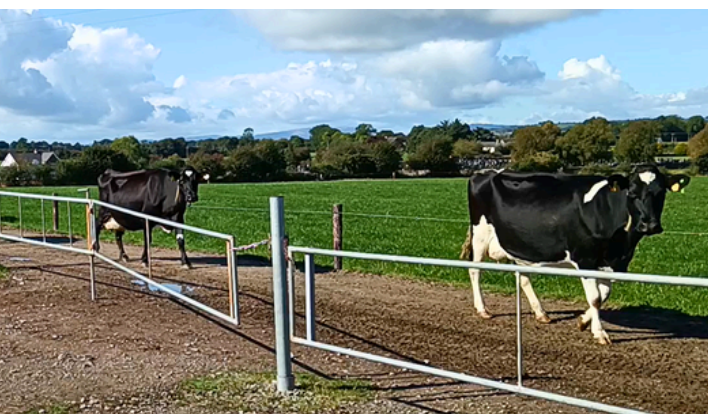
Dairy farm, Teagasc research farm



WATCH NOW



## HISTORY



"Our activities consistently involve a range of research trials, focusing on grass sward types and the breeding and crossbreeding of cattle. One of our key milestones has been the introduction of grass, clover, and multi-species swards, which we actively manage at the farm level. This allows external farmers to gain practical insights into how these systems operate, as well as the potential advantages and challenges of implementing them. Our team consists of five full-time staff members, supported as needed by external assistance from FRS (Farm Relief Services)."



## DAIRY HERD

COWS	140	HOLSTEIN FOR VOLUME	JERSEY FOR MILK SOLIDS	SMALLER SIZE COWS = EASIER MAINTAINANCE								
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)											
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	140 PER YEAR	24 MONTHS AT FIRST CALVING			368 DAY CALVING INTERVAL							



## FARM MANAGEMENT



Grazing  
9 - 10 months per year



Slatted unit with 160 cubicles for cows to lie on, brushes for cow comfort and well ventilated sheds



- Grass/clover/multispecies swards
- 700kg cow/year concentrates in parlour



Automatic scrapers, automatic feeders in parlour, Sensehub® collars on cows



MILKING SYSTEM

MILKING PARLOUR

18-UNIT HERRINGBONE



PRODUCTION

16 L/COW/DAY

4600 L/COW/YEAR

YOUNG HERD: HOPE PRODUCTION WILL RISE IN COMING YEARS

25,000 L/COW/LIFETIME



Protein - 3.83%

Fat - 5.21%



MILK RECORDING



WEEKLY

"Thanks to milk recording, we can track each cow's production, **identify the best performers for breeding**, and detect issues like high somatic cell counts (SCC) or mastitis early. We receive all the results through ICBF."



PRIORITIES

"**Keeping fertility of herd as high as possible.** The more information available on a cow, the better before making decisions on farm."



THE FUTURE

We'd like to upgrade the milking parlour with "feed to yield" feeders.

**What is expected from the HoliCow project?**

More valuable insights to cow performance, fertility and welfare.





# THE KILWORTH FARM



Ricki Fitzgerald



136 ha, grassland 100%, Free draining, excellent soil fertility



Kilworth, County Cork, Ireland



Dairy farm, Teagasc research farm



## HISTORY



"We started running the farm in 2003 when Teagasc put it to lease. There are now 7 people working at the farm. The activities didn't change much, we have a grass-based system with spring calvings. Our herd represents one of the highest EBI (Economic Breeding Index) herds of cows in the country. EBI is a single figure profit index aimed at helping farmers identify the most profitable bulls and cows for breeding dairy herd replacements."



## DAIRY HERD

COWS	465 ANIMALS	260 MILKED COWS	HOLSTEIN FRESIAN	JERSEY	JERSEY CROSS FRESIAN							
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)											
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	273 PER YEAR	24 MONTHS AT FIRST CALVING										



## FARM MANAGEMENT



Grazing  
9 - 10 months per year



Cubicle beds with rubber mats, well ventilated sheds and brushes



- Grass when in lactation
- Grass silage when dry



Automatic calf feeder



MILKING SYSTEM

MILKING PARLOUR

20 UNIT HERRINGBONE



PRODUCTION

18 L/COW/DAY

5100 L/YEAR

20,000 L/COW/LIFETIME



Protein - 3.71%

Fat - 4.60%



MILK RECORDING



WEEKLY

*"Milk recording is useful to us to get accurate milk production figures and to monitor SCC (somatic cell count) and milk production easily."*



PRIORITIES

*Big focus on environment and animal welfare*



THE FUTURE

*New calving facility, new weanling winter housing, new collection yard,*





# CLONAKILTY AGRICULTURAL COLLEGE



Keith Kennedy



Coastal, grasslands, suited to a variety of uses, 115 ha (predominantly grass)



Clonakilty, County Cork, Ireland



Livestock (dairy, beef, sheep) presently. In the past there have been crops and pigs on the farm.



## HISTORY

"The Clonakilty College Farm is used for educational and research purposes.

Currently, there are 6 full time people involved in the agricultural enterprises on the farm."



## DAIRY HERD

COWS	441 ANIMALS	190 MILKED COWS	HOLSTEIN FRESIAN	JERSEY USED IN THE PAST								
BREEDING METHOD	90% ARTIFICIAL INSEMINATION (AI)		BULLS ONLY FOR REPEATING HEIFERS									
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	195-200 PER YEAR		24 MONTHS AT FIRST CALVING		365 DAY CALVING INTERVAL							



## FARM MANAGEMENT



Grazing from February to November



Rubber-matted cubicles with scraper channels and separate feeding passage



- Grass and concentrates throughout the lactation (~700kgs per lactation)
- Silage and straw over the dry period

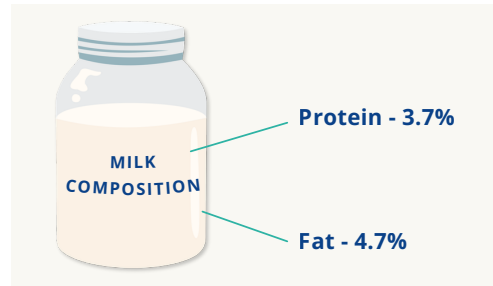


Sensehub heat detection collars and sensor in the meal bin to notify when the level is getting low



MILKING SYSTEM

MILKING PARLOUR	20-UNIT DAIRYMASTER SWIFT-FLOW HERRINGBONE PARLOUR WITH INDIVIDUAL BAILING
PRODUCTION	15 L/COW/DAY



MILK RECORDING



WEEKLY

*“We milk record weekly to **gather research data**. In daily management, regular milk samples are very useful to manage cell count.”*



# OUR FARMS IN Wallonia, BELGIUM

Dairy farming is a key part of Walloon agriculture. In 2023, Wallonia had about 188,000 dairy cows, but their numbers have dropped significantly, halving over the past 30 years. At the same time, herd sizes have grown, averaging 69 cows per farm in 2023, compared to less than half that in 1990. This restructuring has been accompanied by a dramatic fall in the number of farms and farmers, with three quarters having gone out of business since 1990.



Wallonia's dairy herd is concentrated in key agricultural areas:

- The Hainaut silt plateau (northwest) and the grassland region (northeast) each hold 23% of the cows.
- Haute Ardenne, once a livestock hub, now has only 12%.
- At the provincial level, Liège (38%) and Hainaut (29%) lead in production.

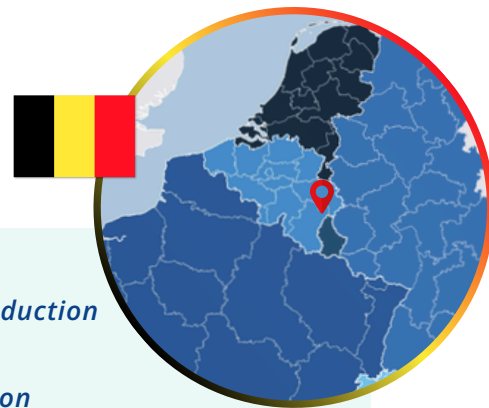
Wallonia's natural conditions are ideal for dairy farming, with grassland covering 47% of its agricultural area. Its temperate climate and abundant resources, like grass and water, help farms strive for self-sufficiency in feed.



Walloon farms produce about 30% of Belgium's milk, with stable output. Most milk (over 90%) is processed by dairies (cooperatives, multinationals, and SMEs) into butter, cheese, and other products. Only 5-10% is processed on farms and sold locally.



# LA FERME SAINT MARTIN



Vincent Sepult



Dairy farm, electricity production



Malempré, Luxembourg Province, Belgium



60ha, Haute Ardenne region (altitude, not fit for growing crops)



## HISTORY



"For five generations, this farm has adapted and grown, while staying rooted at the heart of the village, right next to the church, a rare setting for a farm. Milk production began in 1996, followed by farm tourism with a holiday cottage in 2010, and now energy production. A major change occurred in 2015 with the decision to stop the milking robot and going back to milking in the pastures with a mobile milking parlour. Today, smart farming tools like a hay dryer and a gas generator support sustainable practices, helping the farm achieve full energy autonomy. Since 2019, the family has carried on this legacy, and a dedicated team of three ensures its continued evolution."



## DAIRY HERD

COWS	100 ANIMALS	50 MILKED COWS	BLACK HOLSTEINS
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)	NATURAL MATING	
CALVING PERIOD	ALL YEAR LONG		
CALVINGS	65 PER YEAR	27 MONTHS AT FIRST CALVING	421 DAY CALVING INTERVAL



## FARM MANAGEMENT



Grazing  
6 months / year



Free stall, scraped hallway



- Grass
- Hay
- Cereals
- Maize grains



Straw bedding, brushes in the barn, grazing



MILKING SYSTEM

MILKING PARLOUR



MOBILE MILKING PARLOUR TO MILK IN THE PASTURES

COST-EFFECTIVE AND BETTER FOR COW WELFARE THAN ROBOT

PRODUCTION

25 L/COW/DAY

8000 L/YEAR



MILK RECORDING



MONTHLY

*"We record milk production monthly to **select the best cows**. It's a valuable tool for us"*



PRIORITIES

- Production
- Feed autonomy
- Energy autonomy



THE FUTURE

*Future investments include a new barn for the cows.*

**What is expected from the HoliCow project?**

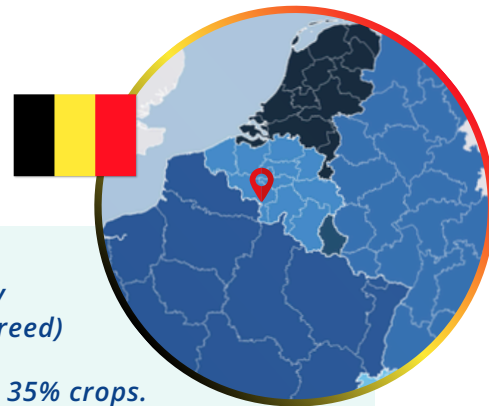
*We hope to improve animal and farmer welfare.*



WATCH NOW



# LA FERME DU PETIT PONT DE PIERRE



Catherine and Léon Bastin



Mixed farm with priority on cattle (Bleue Mixte breed)



Montignies-Saint Christophe, Hainaut Province, Belgium



~100 ha, 65% pastures - 35% crops. Good grazing and crop lands



## HISTORY



"I (Catherine) took over the farm in 2016, becoming the third generation to continue its legacy. I work together with my parents, and we breed **Bleue Mixte** cattle: a historical, rustic breed perfectly adapted to our farm and way of working. Its resilience also allows us to diversify our sources of income. My grandmother already produced butter on the farm, and **we have proudly continued this tradition**, selling our butter directly at the farm ever since."



## DAIRY HERD

COWS	250 ANIMALS	100 MILKED COWS	DUAL PURPOSE BELGIAN BLUE									
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		NATURAL MATING									
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	~110 PER YEAR		32 MONTHS AT FIRST CALVING			375 DAYS CALVING INTERVAL						



## FARM MANAGEMENT



Grazing from April till the end of October (depending on the weather)



Free stall with manure scraper, automatic feeding system, rubber mats for the cows and straw beddings for young animals; fans and brushes



Total mixed ration: maize, grass silage, nitrogen correction, sugarbeet pulps, fodder beet (in winter). All fodder is produced on farm (except the pulps).



SmartVel system to monitor calvings



## MILKING SYSTEM

### MILKING PARLOUR



MILKING BETWEEN  
THE BACK LEGS,  
RAPID EXIT

### PRODUCTION

305 DAYS IN MILK

~6000 L/COW/YEAR



125,000 cells

Protein - 3.40%

Fat - 3.80%



## MILK RECORDING



## MONTHLY

*Milk recording is useful for monitoring the farm, for better knowledge of my herd, for genetic improvements, for reproduction and health monitoring (cell count for example), and for participating in **breed preservation and selection programmes**.*



## PRIORITIES

*Our priority is to keep the farm (herd, pastures, direct sales, etc.) despite facing the **constant challenges** that come with the farming job: climate change, economical challenges, etc.*



## THE FUTURE

Our next step is to improve the milking system.

### What is expected from the HoliCow project?

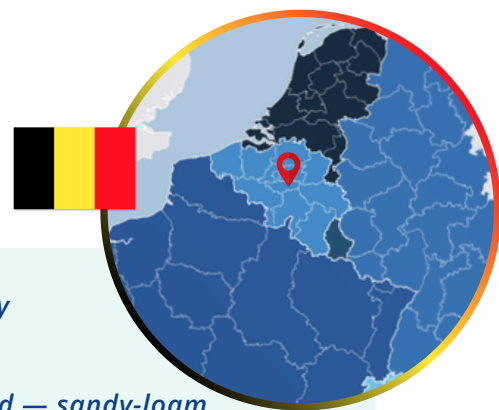
- A dashboard with information about the herd and alerts for useful indicators
- Nice communication towards the broad public.



WATCH NOW



# FERME DU CENTRE WALLON DE RECHERCHES AGRONOMIQUES



Druez Maxime



Cattle farm exclusively (Black Holsteins)



Gembloux, Namur Province, Belgium



20 ha, 100% grassland — sandy-loam soil adapted to crops and pastures



## HISTORY

“Founded in 1872, the CRA-W established its dairy research farm in the 1980s. Dedicated to advancing agricultural practices, the CRA-W conducts research designed to directly benefit farmers. A new project is underway to construct a modern barn by 2027, designed to house 70 dairy cows with integrated pasture access. The farm is operated by a team of five staff members, including three workers who manage daily herd monitoring and milking, supported by two replacement workers as needed.”



## DAIRY HERD

COWS	115 ANIMALS	50 MILKED COWS	BLACK HOLSTEINS									
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)											
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	50-70 PER YEAR	~26 MONTHS AT FIRST CALVING		377 DAYS CALVING INTERVAL								



## FARM MANAGEMENT



Grazing for 8 - 10 months per year



Straw beddings and concrete manure hallway (scraped), brushes



Mixed ration with maize silage, grass silage, pulps in summer, concentrate.



SCR Heatime® pro (heat detection and health monitoring), feeding robot, automatic trough feeder, weather station.



MILKING SYSTEM

MILKING PARLOUR



PRODUCTION

HERRINGBONE 2X5

35 L/COW/DAY

9,000-11,000 L/COW/YEAR

10,000 L/COW/LIFETIME



275,000 cells

Protein - 3.5%

Fat - 4.5%



MILK RECORDING



MONTHLY

Milk recording is **helpful for decision making and herd management**. We get the results (kg of milk, fat and protein ratio, cell count and urea) every month.



PRIORITIES

Hedges in the pastures since 2022.  
"DECiDE" tool to assess energy efficiency and greenhouse gas emissions.



STRENGTHS & WEAKNESSES

Outdated facilities, but practices at the cutting edge of technology.



THE FUTURE

We have the project of building a new barn with a feed kitchen.

What is expected from the HoliCow project?

- Easy-to-use tool enabling herd and individual monitoring with indicators linked to the milk
- Also curious to see the results from other pilot farms

# OUR FARMS IN FRANCE

France's dairy industry generates €43 billion in sales and supports around 300,000 jobs. As Europe's second-largest cow's milk producer, the country had more than 46,000 farms delivering 22.7 billion litres of milk in 2023, an average of 7,500 kg per cow per year. Despite an increase in herd size (70 cows per farm in 2023 vs. 55 in 2013), the family farm model remains dominant.

The Grand Ouest region accounts for 50% of dairy cows and over half of total milk production. The Prim'Holstein, Normande, and Montbéliarde breeds represent nearly 90% of recorded lactations, alongside about 20 other breeds. Mountain regions maintain a strong dairy tradition, producing high-quality cheeses, preserving local breeds, and boosting agri-tourism.





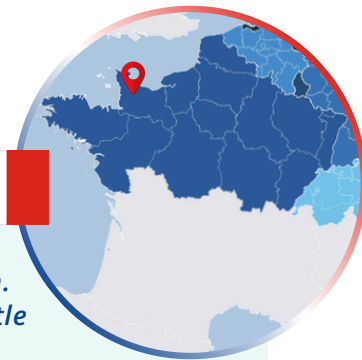
France has nearly 750 milk processing sites, including 500 industrial cheese plants. Additionally, 2,820 farms processed 355 million litres of milk on-site for direct sale in 2023.

Cheese production absorbs 35% of total milk output, with 28 cow's milk cheeses holding Protected Designation of Origin (PDO) status and 11 cheeses carrying a Protected Geographical Indication (PGI). The growing demand for farmhouse products and the high use of raw milk in quality-labeled dairy goods highlight the enduring importance of traditional cheesemaking.

Despite inflation, French dairy consumption remains strong, with 24 kg of cheese and 8 kg of butter consumed per person annually—the highest in Europe.



# LA BLANCHE MAISON



**Flore LEPELTIER**  
(R&D projects manager)



**Agroecological mixed farm.**  
100% Normande dairy cattle



**Pont-Hébert, Manche Department,**  
Normandy, France



**96 ha, Wooded parcels. Clay-loam soils.**  
5.2% crops, forage 94.8% as main production



## HISTORY



*"Our farm's journey began in 1972 as an experimental site. In 1982, the herd became exclusively Normande. We evolved over time, adopting an agroecological system in 2017 and optimizing resources like pastures and hedges (now tested as bedding). In 2023, we renovated our facilities, building a new barn and upgrading the milking parlour. Today, our six-person team drives both farm operations and experiments, ensuring sustainability and innovation. We deliver non-GMO, grass-fed milk, and PDO (Protected Designation of Origin) Isigny butter and cream. Integration of the low-carbon approach of 'Les Maîtres Laitiers du Cotentin'."*



## DAIRY HERD

COWS	220 ANIMALS	90 MILKED COWS	NORMANDE BREED
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		
CALVING PERIOD	4 PERIODS OF 6 WEEKS PER YEAR		
CALVINGS	90 PER YEAR	27 MONTHS AT FIRST CALVING	400 DAYS CALVING INTERVAL



## FARM MANAGEMENT



Grazing from March till November (9 months)



Free stall barn with straw bedding. Very open stall, the exercise area is scraped up with a rope scraper and equipped with brushes.



We balance feed with fodder: 25 ha of pasture in summer, 50% maize and 50% protein-rich forage in winter, supplemented with rapeseed cake and brewers' grain.



Activity sensors on the herd, connected weather stations, water meters.



## MILKING SYSTEM

<b>MILKING PARLOUR</b> 	<b>PARALLEL PARLOUR (REAR MILKING) 2X10</b>
	<b>COMPLEMENTARY SYSTEM WITH F@RM XP NETWORK</b>
	<b>2 MILKINGS/DAY FOR EXPERIMENTAL ANIMALS</b>
<b>PRODUCTION</b>	<b>21 L/COW/DAY</b>
	<b>600,000 L ANNUAL PRODUCTION</b>



Protein - 3.67%

Fat - 4.29%

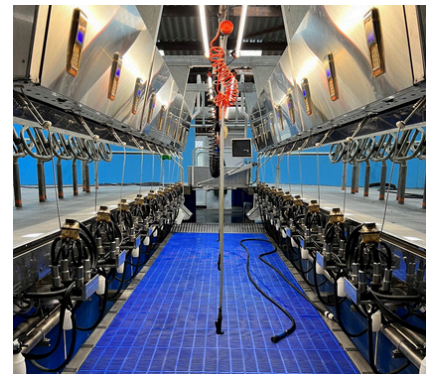


## MILK RECORDING



### MONTHLY

We carry out milk recordings **to closely monitor production and quality**. This helps us adjust supplementation, track lactation stages, and compare with reference breeders. It's an essential tool for analysing cell counts, managing dry-off and lactation start, and identifying signs of acidosis. Most importantly, it provides **a solid basis for discussions with our advisor, ensuring continuous improvement**.



## PRIORITIES

- Using smart tools like connected weather stations, Medria collars, water meters, and manual weight recording from birth.
- Creating a system that benefits the environment. Monitoring tools: DIAPASON and CAP2ER.



## STRENGTHS & WEAKNESSES

Self-sufficiency in forage with long grazing periods from a young age for optimal grass use. Breeding and calving organized in 4 periods for efficient workload, requiring careful monitoring.

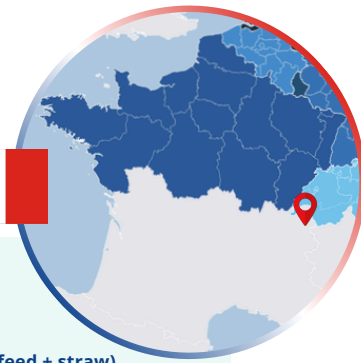
### What is expected from the HoliCow project?

Beneficiate from decision-making tools and from alerts to optimise herd management.





# CENTRE D'ÉLEVAGE DE POISY



**Adeline ALLARD**  
(training and R&D's point of contact)



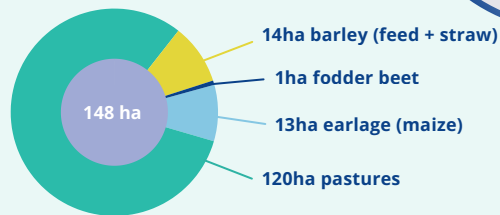
**Dairy cattle farm with some self-consumption crops**



**Poisy, Haute-Savoie department. Auvergne-Rhône-Alpes region, France**



**At the foot of the Northern Alps, silty clay soil and some plots on glacial til**



## HISTORY



"Our dairy farm was founded in 1967 by the dairy sector of the Rhône Alps, Jura, and Doubs regions. **Over the years, we have continuously evolved, adapting to new standards, improving sustainability, and expanding our research efforts.** In 2004, we revised the PGI specifications for Tomme, Emmental, and Raclette, eliminating whole maize plant silage. By 2008, we transitioned from liquid manure to compost as an organic fertilizer. Since the 1990s, we have actively participated in R&D projects, increasing from 1-2 per year to 10-12 since 2022. Today, **we produce raw milk dedicated to Tomme, Emmental, and Raclette de Savoie, respecting the PGI regional requirements.** We work with three breeds: Montbéliarde, Abondance, and Prim'Holstein, they are selected to represent the heritage of the Rhône Alps. We also raise Tarentaise heifers to support mountain farmers in the Tarentaise region, who need a breeding unit."



## DAIRY HERD

COWS	200 ANIMALS	85 MILKED COWS	50% MONTBÉLIARDE	45% ABONDANCE	5% PRIM'HOLSTEIN
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		EMBRYO TRANSFERS (DELAYS THE START OF BREEDING)		
CALVING PERIOD	ALL YEAR LONG EXCEPT: - FROM JULY TO THE 15TH OF AUGUST TO AVOID START OF LACTATION IN THE SUMMER. - 3 WEEKS AROUND CHRISTMAS BECAUSE THERE IS LESS STAFF.				
CALVINGS	110 TO 120 PER YEAR	30 MONTHS AT FIRST CALVING	400 DAYS CALVING INTERVAL		



## FARM MANAGEMENT



*Cows are in pastures 8 months per year.*



*Free-stall barn, straw-bedded area and cow traffic alleys.*



- Summer: grazing with concentrate; hay if needed.
- Winter: hay, crop regrowth, earlage (maize), rolled barley, and cattle cakes (soy and rapeseed).

*"Our goal is to achieve forage and energy self-sufficiency while continuously improving protein self-sufficiency."*

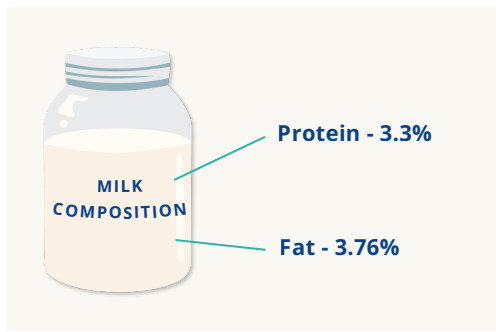


*2 electric brushes, straw-bedded area, good natural ventilation of the barn, misting and ventilating in the waiting area and in the milking parlour.*



MILKING SYSTEM

MILKING PARLOUR	TANDEM MILKING PARLOUR 2X4 WITH AUTOMATIC CLUSTER REMOVAL
	PERFECTLY ADAPTED TO TRAINING STUDENTS
PRODUCTION	540,000 ANNUAL PRODUCTION
	7000 L/YEAR/COW
	AVERAGE NUMBER OF LACTATIONS: 2.9



MILK RECORDING



MONTHLY

**Milk recording is essential for herd monitoring, for taking technical decisions, for culling, for milk quality monitoring, and for educational reasons.** The annual assessment document (BTTL), which summarises the dairy herd specifications, is also very useful.

We milk record once per months for two successive milkings and receive the results on the website. Information from milk recording used daily: Cell counts (SCC) - Calving date - Date of last AI - Rates and milk yield for decisions regarding AI.



PRIORITIES

- *Environmental Monitoring: CAP2ER (annual impact assessment). Technical & Economic Monitoring: DIAPASON (annual self-sufficiency indicators). 2024 Focus: Biodiversity assessment.*
- *Innovation in smart farming: weather station, Medria collars, cameras for calving monitoring, humidity and temperature sensors (barn & outdoors), connected water meter, automated rainwater harvesting monitoring, agrivoltaics project under consideration.*
- *Sustainability goals: grassmilk production, winter cover crops, genetic improvements, maximising feed & energy self-sufficiency, improving protein self-sufficiency (by replacing soybeans with 14ha of lucerne), prioritizing good feed margins over maximizing milk production, advancing early calving.*

STRENGTHS & WEAKNESSES



- *Located near Annecy, a highly urbanized area*
- *Thriving cheese production region*
- *Popular tourist destination*
- *Fertile soils*



THE FUTURE

We have the project of planting 2km of hedges to increase shadow in the pastures in summer. Maybe change the milking parlour, and adapt the barns to high summer temperatures.

**What is expected from the HoliCow project?**

We hope that the project can help improve advice and technical management on dairy farms to be able to react as quickly as possible when the first signs of animal problems appear.





# EARL DU MADELBOS



Goubert Sébastien



Mixed farm: breeding, cereals and maize



Arpajon-sur-Cère, Auvergne region, France



Semi-mountainous. 88ha total cultivated area: Cereals - 14ha, Maize silage - 16ha



## HISTORY



*"For three generations, our farm has been a place of dedication, evolution, and resilience. In 2004, we took over the farm, continuing a family tradition while adapting to new challenges and opportunities. Initially, we managed a mixed herd of suckling and dairy cows, but in 2005, we made the decision to focus entirely on dairy production.*

*One of the biggest milestones in our journey was the introduction of a milking robot, which significantly improved our working conditions and efficiency. Today, our farm is run by a small but committed team: one full-time farmer and a dedicated volunteer.*

*We have chosen Prim'Holstein cows for their excellent productivity, allowing us to maintain a sustainable and high-quality dairy operation."*



## DAIRY HERD

COWS	127 ANIMALS	74 DAIRY COWS	PRIM'HOLSTEIN
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		VERY FEW NATURAL MATINGS
CALVING PERIOD	ALL YEAR LONG		
CALVINGS	70 PER YEAR	25 MONTHS AT FIRST CALVING	



## FARM MANAGEMENT



From April to November, but only for heifers and dried off cows during the first month after dry off.



Free stall with straw beddings




Semi-complete mixed ration + feed in the milking robot.

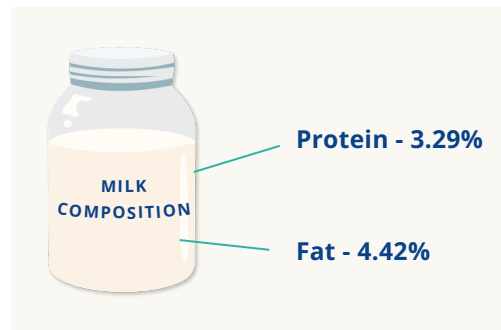


SenseHub monitoring collars on heifers; video cameras in the building.



MILKING SYSTEM

MILKING PARLOUR	MILKING ROBOT SINCE 2022
 PRODUCTION	11,400 L/YEAR



MILK RECORDING

 EVERY TWO MONTHS

*“With milk recording, we get an external view and performance monitoring. When the advisor comes, we can review the animals: feeding and production costs. We get the results directly via email or online.”*




PRIORITIES



STRENGTHS

- Cap2er certification (environmental impact monitoring)
- Environmental certification (HVE)
- CBPE certification (Charter for Best Farming Practices) with BoviWell
- Autonomous in fodder, high production (870 000L/year)

& WEAKNESSES

-  • 2 different sites for the heifers.
- Task force = only 1 person (dad retired but still helping)



THE FUTURE

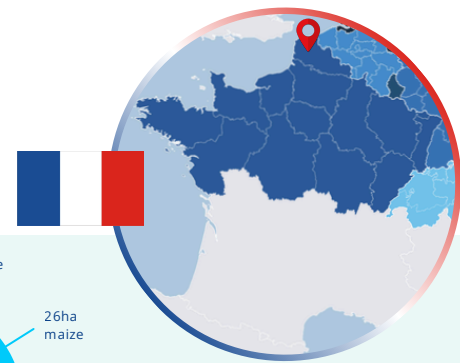
*We'd like to add ventilation (fans) in the cows' building and to add a cover on the manure storage to increase the value of manure.*

**What is expected from the HoliCow project?**  
*Efficient decision-making tools for time-saving management*





# SCEA DU MONT DE GOURNAY



**MAEYAERT Jean-Luc**



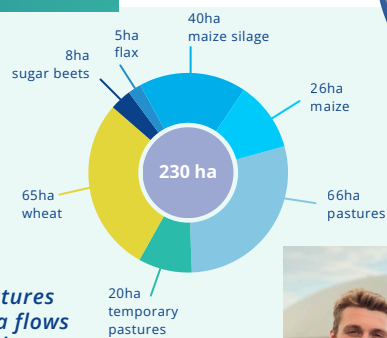
**Verchocq, Hauts-de-France region, France**



**Mixed farming: 10% crops, 45% livestock farming, 30% energy production**



*A scenic mix of valleys and plateaus, Montreuil-sur-Mer features rolling terrain and scattered rural settlements. The River Aa flows through the town, with 89% of the land dedicated to agriculture (53% arable, 36% grassland, 6% woodland)*



## HISTORY



*Our family has farmed for three to four generations, always keeping the tradition alive within our own family. **What started as a small farm in 1999 has grown into a thriving dairy and energy-producing operation.***

*Over the years, we have expanded our herd of Prim'Holstein cows, increased milk production, and embraced innovation. Key milestones include partnering with family in 2004, adopting agroecological practices in 2009, and installing solar panels in 2011. In 2019, we launched a methanation unit, doubling its capacity by 2022 and further increasing production. Today, we produce 2.3 million liters of milk, supported by a dedicated family team and employees.*

***Our commitment to sustainability, efficiency, and innovation continues to drive our farm forward.***



## DAIRY HERD

COWS	190 MILKED COWS	PRIM'HOLSTEIN FOR HIGH PRODUCTION (NEED FOR VOLUME)										
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)											
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	180-200 PER YEAR	23 MONTHS AT FIRST CALVING	CALVING INTERVAL: 370 DAYS									



## FARM MANAGEMENT



*Pastures only for one group (6 months/year). The others don't go out.*



*Free stall with latex mattresses, fans in one of the buildings, curtains in the other, brushes.*



*Complete ration distributed with a self-propelled mixer: maize silage, grass silage, pressed pulp, rapeseed meal, soy meal.*

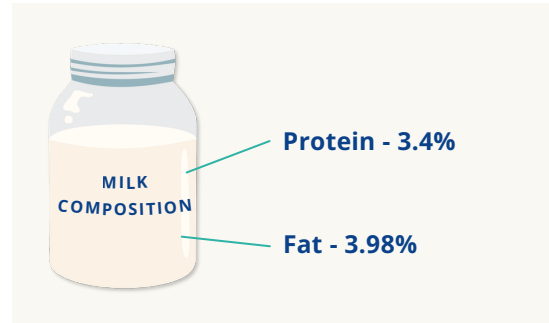


*Monitoring collars (Medria), weather station (SENCROP), self-propelled ration mixer.*



## MILKING SYSTEM

MILKING PARLOUR	PARALLEL 2X20
PRODUCTION	35 L/COW/DAY
	2.3 MILLION L PER YEAR



## MILK RECORDING



MONTHLY

"We milk record to get regular data, adapt the ration, for selection. **It is essential.** Individual production for each cow helps us choose when to cull, cell counts, rates for selection. We get the data through an online platform (Synel) and via email."



## PRIORITIES

- Carbon and soil protection
- Wellbeing of soil, livestock, and breeders
- Economic and technical efficiency

### Sustainable initiatives:

- Low-carbon pilot farm
- SelfCO2® self-assessment tool
- DEPHY network member (phytosanitary product reduction)
- ISO 14001 certification (environment & society)
- HVE3 environmental certification
- Energy production (methanation + solar panels)
- Direct sowing for 15 years

## STRENGTHS

Potential gross operating surplus, control of costs, purchase of electricity and methane (securing the system), resilient system, productivity, quality of milk and of fodder, coherence in crops management, employees are involved and motivated, external responsibilities.

## & WEAKNESSES

High debts, mass production without specialisation, high cash requirements, increased costs, stock management for methanation, management of spreading, staff management and peak in activity management.



## THE FUTURE

2025: solar panels on the heifers' building, replace the scrapers, new mattresses or deep stalls for more hygiene

2026: milking robot; the goal is to reach more milk quantity per cow

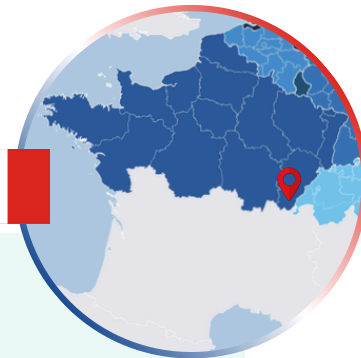
### What is expected from the HoliCow project?

Some projects had great impacts on the farm (low carbon), why not this one?

A project can get us moving, make us proactive.



# SCEA DES COTEAUX

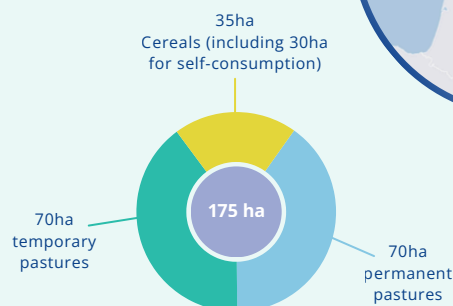


**Guillaume Basset**

**Lavigny, Jura department, Bourgogne-Franche-Comté, France**

**Mixed farm, PDO organic Comté (from Montbeliardes breed)**

**Plain (flat land)**



## HISTORY

*SCEA Des Coteaux Farm has been managed by the current farmer since 2010. Rooted in tradition, the farm initially focused on PDO-certified production and has proudly transitioned to organic PDO farming since 2019. The team behind the farm's success includes a dedicated farm manager, 1.5 employees, and a trainee, all working together to ensure sustainable and high-quality farming practices.*



## DAIRY HERD

COWS	77 DAIRY COWS	67 MILKED COWS	47 DAIRY HEIFERS	MONTBÉLIARDES
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)			PRODUCTION OF PDO COMTÉ
CALVING PERIOD	ALL YEAR LONG, BUT MORE CALVINGS IN THE WINTER			
CALVINGS	78 PER YEAR	43 MONTHS AT FIRST CALVING	CALVING INTERVAL: 400 DAYS	



## FARM MANAGEMENT



*Pastures from March till October (when the weather allows)*



*Free stall (mat + straw bedding)*



*Winter: ventilated hay and 2nd cut  
Summer: grazing*

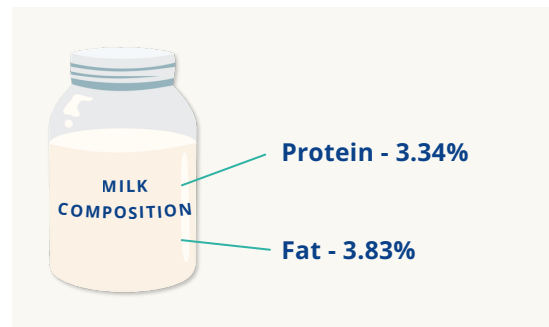


- Sensehub collars
- Automatic feeders (5)
- Hay dryer



## MILKING SYSTEM

MILKING PARLOUR	HERRINGBONE 2X8
PRODUCTION	21 L/COW/DAY
	6,477 L/COW/YEAR



## MILK RECORDING



### MONTHLY

Results are sent through the Mil'klic app and then we have a visit from our advisor.



## PRIORITIES

### STRENGTHS

- Plots next to each other
- PDO
- Good work organisation
- Water in the pastures

### & WEAKNESSES



- Low soil potential (hydromorphic and dry)
- Difficulty to find workers



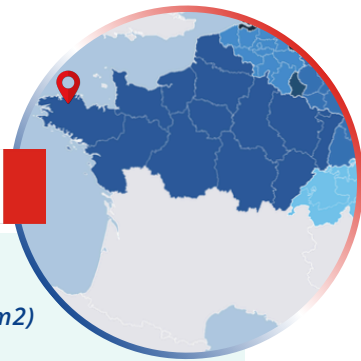
## THE FUTURE

New building project: extend storage area (hay and equipment) with photovoltaic roof and heat recovery for hay drying.

Need for 30ha more to be more self-sufficient (forage and cereals). For example, Alfalfa was purchased over the last 3 years. ”



# GAEC DE LA HAIE



Virgile Moré and Bertrand Thomas



Mixed farm  
dairy cows and meat poultry (1500m<sup>2</sup>)



Plouégat-Moysan, Bretagne region,  
Finistère department, France



200ha including 90ha crops for sales



## HISTORY

Spanning four generations, GAEC de la Haie Farm has evolved significantly over the years. The establishment of its current partners occurred between 1998 and 2023, with a strong focus on milk production since the late 1990s. Starting with 350,000 liters in 1998, the farm now produces an impressive 1,400,000 liters annually.

In 2006, a milking robot was introduced, followed by a new robot in 2022 to support the shift towards intensive production and battery farming.

The dedicated team consists of 2 partners, 1 employee, and 1 trainee, ensuring efficient and sustainable farm operations.



## DAIRY HERD

COWS	320 ANIMALS	110 MILKED COWS	130 DAIRY COWS	HOLSTEINS FOR HIGH PRODUCTION
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)			
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	150-160 PER YEAR	24-25 MONTHS AT FIRST CALVING	CALVING INTERVAL: 398 DAYS	



## FARM MANAGEMENT



Grazing for the heifers only



Free stall with mats, scraper, milking robot, fans, brushes




Maize silage, grass silage, maize grains and soya/rapeseed

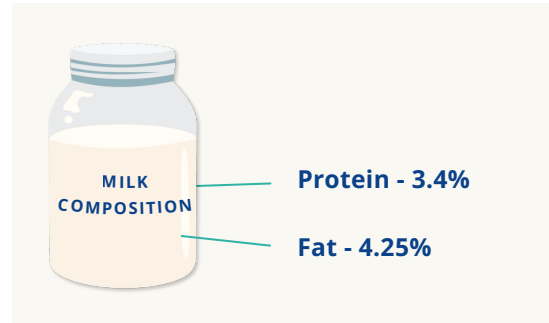


Herd Navigator™ Delaval (progesterone monitoring)



MILKING SYSTEM

MILKING PARLOUR	2 MILKING ROBOTS DELAVAL VMS™ V310
 PRODUCTION	38 TO 41 L/COW/DAY ON AVERAGE
	1,450,000 L ANNUAL PRODUCTION



MILK RECORDING

 10 TIMES PER YEAR

At the farm, milk quality is officially tested 10 times per year. These tests focus on **key metrics like cell counts and milk composition**, including fatty acids, ensuring high standards are maintained.

The monthly average cell count results are particularly useful for daily farm management. Results are received promptly, providing essential insights to guide efficient and informed decision-making.



PRIORITIES

Maximizing milk production is crucial, with profit margins per cow being the key metric. Controlling feeding and reproduction costs is essential to maintaining profitability.

STRENGTHS & WEAKNESSES

- The farm is achieving its cruising speed with good production
- Our system requires a good forage stock because of drought risks



THE FUTURE

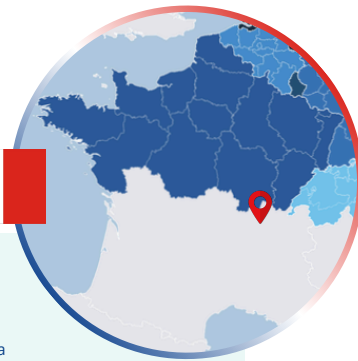
What is expected from the HoliCow project?

More efficiency in terms of feeding strategy for the herd.





# GAEC DES DOUGLAS



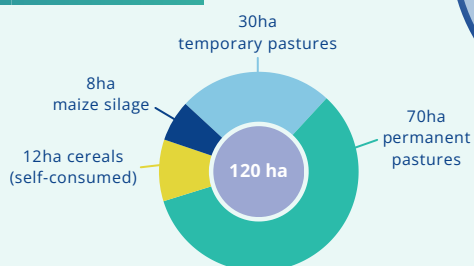
**Samuel and Vianney Subtil**



**Les Sauvages, Rhône Department, France**



**Mixed farm: livestock and crops**



## HISTORY



The farm was taken over in 1990 and later became a family GAEC, passed on to the two sons. The herd consists of Montbéliarde cows, with grouped calving from August to October.

A straw-bedded housing system was built in 2005. Feeding practices evolved with a reduction of maize silage to 20 kg from September to March, combined with high-quality multi-species silage. Non-inversion tillage was also introduced.

The farm uses embryo transfer and relies on strong herd management. Milk is delivered to the Sodiaal cooperative.



## DAIRY HERD

COWS	70 COWS	50 HEIFERS	MONTBÉLIARDES FOR PRODUCTION AND GOOD HEALTH									
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)											
CALVING PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CALVINGS	75 PER YEAR		30 MONTHS AT FIRST CALVING				CALVING INTERVAL: 380 DAYS					



## FARM MANAGEMENT



Grazing from April to October



Straw-bedded housing system (built in 2005)



Grass silage, maize silage, cereals, maize grains, soja and canola

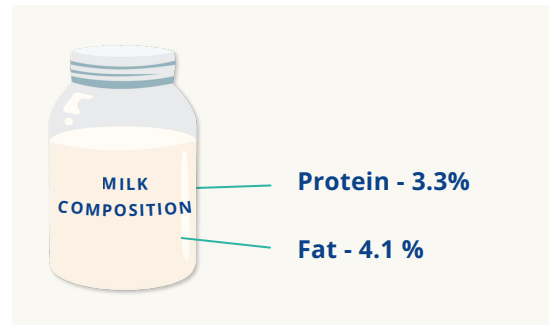


Fodder analysis, Lait'age analysis, heat stress diagnosis



## MILKING SYSTEM

MILKING PARLOUR	HERRINGBONE 1X10
 PRODUCTION	28 L/COW/DAY
	8000-8500 L/COW/YEAR



## MILK RECORDING



12 TIMES PER YEAR

*We like to monitor cell counts, ketosis, methane. Thanks to milk recording, we also get a monthly fodder analysis through the Lait'age tool.*

*Milk recording enables us to anticipate and react quickly to potential problems. We check the data every 3 days to ensure an optimal herd management and make sure to receive the quality bonus all year long.*



## PRIORITIES

*Our priority is to adapt the farm and the herd to climate change.*

*We are also continuously preparing for when our sons will take over the farm.*



## THE FUTURE

### What is expected from the HoliCow project?

We hope to get new indicators through regular milk recording, so that we can work on cow resilience and heat stress.

Planned investment include a photovoltaic installation, a robot to push back feed, and mechanical ventilation, or even sprinklers.


# OUR FARMS IN Schleswig-Holstein, GERMANY

Schleswig-Holstein, Germany's northernmost federal state, is characterised by a rich agricultural tradition shaped by its unique geography.



Nestled between the North Sea and the Baltic Sea, the region offers fertile plains, a temperate maritime climate and extensive grasslands - ideal conditions for arable farming and livestock breeding. Geologically, Schleswig-Holstein is divided into three main landscapes: the Marsch, the Geest and the Östliche Hügelland, each of which brings its own challenges and opportunities. Agriculture has always been a central economic sector in the federal state, with a particular focus on milk and meat production.





Dairy farming occupies a prominent position, with Holstein-Friesian cattle dominating the landscape. With over 2.8 million tonnes of milk per year, Schleswig-Holstein makes a significant contribution to German milk production. According to data from the LKV-Schleswig-Holstein, there are around 280,000 dairy cows on more than 2,000 farms in the region, with the average herd size being around 140 cows. In 2024, the average milk yield per cow was almost 10,000 kilograms with a fat content of 4.1% and a protein content of 3.4%.

Over time, Schleswig-Holstein's agriculture has adapted to changing consumer trends. While traditional dairy and meat products continue to play a central role, the demand for regionally produced foods and plant-based alternatives is increasing. As a result, more and more farms are focussing on species-appropriate animal husbandry and direct marketing. Local quality labels are also becoming increasingly popular in the catering and retail sectors.

Without losing its deeply rooted agricultural identity, Schleswig-Holstein is successfully meeting the new challenges with a combination of tradition and innovation.



# RÖSCHMANN



Christin Röschmann



Dairy farm Red Holstein. Fodder production (grass, maize) and cereals/grains (rye + straw)



Rendsburg-Eckernförde, State Schleswig-Holstein, North German Plain region, Germany



200ha including 90ha crops for sales. 44ha grasslands, 33ha crops



## HISTORY



*"We are the sixth generation managing this farm, which we took over in 2015. Over time, we have optimized feed production to improve performance, but we have never changed our breed, purchased animals, or engaged in direct sales.*

*The droughts of 2018 and 2019 were challenging. With sandy soil and frequent dry phases, we have to be precise in managing feed production to ensure we always have enough space and resources available.*

*The farm is run by just the two of us, which means efficiency is key in everything we do"*



## DAIRY HERD

COWS	115 ANIMALS	60 COWS	55 OFFSPRINGS	RED HOLSTEINS
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)			
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	~60 PER YEAR	28 MONTHS AT FIRST CALVING	CALVING INTERVAL: 399 DAYS	



## FARM MANAGEMENT



Pastures from May till October (6 months)



Free stall, 3 rows, barn from 1982, brushes



Feed mixer wagon. Grass and maize: own production. Concentrate feed, premix and minerals: purchased.

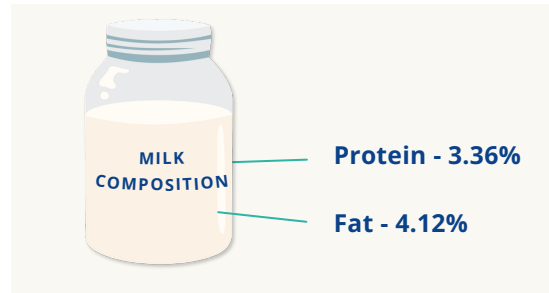


Security camera in the calving stall



MILKING SYSTEM

MILKING PARLOUR 	HERRINGBONE MILKING PARLOUR
	FEEDING GRAINS: VERY GOOD CONTROL OVER THE ANIMALS.
PRODUCTION	9277 L/COW/YEAR



MILK RECORDING



MONTHLY

*“We use milk recording for herd monitoring since we don’t have other sensors at the farm. It is very useful for milk production/yield, cell counts, ketosis, energy and protein intake, fertility. We get the results online, but I check them mostly in the app.”*



PRIORITIES

*Animal health*



THE FUTURE

*Optimisation of what we already have.*

**What is expected from the HoliCow project?**

*Good health data.*





# SCHEEL



**Henning Scheel**



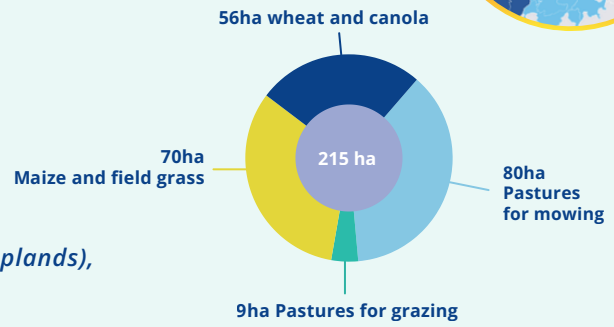
**Barlt, State Schleswig-Holstein, North German Plain region, Germany**



**Dairy farm with crops**



*Marsch region (flat) with peatlands, moor (sandy uplands), that means only grazing is possible in some areas*



## HISTORY

Since 1911, our farm has been passed down through four generations. We took over in 2015, **shifting from pigs and cabbage to a focus on dairy farming.** Today, our main income comes from milk, while cereals are grown mainly for straw.

Our team includes two managers (a married couple), a senior farmer, one full-time employee, and occasional helpers.

We mainly raise Red Holsteins, along with Black Holsteins and a few Angler crosses. Black Holsteins joined in 2012 when we expanded, and the Angler crosses came from an unexpected breeding mix-up. **Through time, we've evolved, but our dedication to dairy farming remains.**



## DAIRY HERD

COWS	426 ANIMALS	230 DAIRY COWS	RED AND BLACK HOLSTEINS
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		
CALVING PERIOD	ALL YEAR LONG		
CALVINGS	240 PER YEAR	25 MONTHS AT FIRST CALVING	CALVING INTERVAL: 430 DAYS



## FARM MANAGEMENT



Pastures only for pregnant heifers. Calves from 6 to 12 months old. Dry cows: May till October (summer)



Deep litter free stall with two groups of cows, brushes, blinds on the side of the barn that can be opened/closed.





Feed mix in feed mixer wagon: Grass silage, maize silage, cereals, minerals. Once per day + pushed several times with Hoftrac feed pusher. Freshly-calved cows also have grains.



Herd management programme "Dairy Plan" from GEA, milking parlour with milk quantity measurement/control + performance data, activity sensors (collars), sensehub collars for heat detection of the heifers.



## MILKING SYSTEM

MILKING PARLOUR	HERRINGBONE SWING-OVER (GEA)	 <p>MILK COMPOSITION</p> <p>Protein - 3.46%</p> <p>Fat - 4.13%</p>
 <p>PRODUCTION</p>	27 L/COW/DAY	
	9620 L/COW/YEAR	
	21,935 L/COW/LIFETIME	



## MILK RECORDING



### MONTHLY

We record milk data to monitor cell counts, optimise feeding, and improve genetics and breeding. **Combined with genotyping, it helps us make informed breeding decisions and adjust feed rations.** All data from the milking and milk recording are used to monitor the cows and are also important for heat detection. **Results are easily accessible** via the LKV website or mobile app. Our herringbone swing-over milking parlour (GEA) ensures efficient milking, even with just one person. As all animals pass the milker, we can closely monitor their health, including hoof condition. This system helps us maintain **a productive and healthy herd.**



## PRIORITIES

- Welfare and healthy, resilient animals. Healthy growth and optimising the management → performance improvement every year.
- Never losing the passion and fun of working and of taking care of animals.

## STRENGTHS & WEAKNESSES

We have a family farm, meaning that there is big interest in every single animal and in the company as a whole. The workload and responsibility, however, are on the family so we have not much free time and we also rely on external labour forces.



## THE FUTURE

Currently investing into new tractor, cattle rake, feed mixer wagon. Manure tank for more storage capacity. Maybe someday a new barn for young cattle and dry cows.

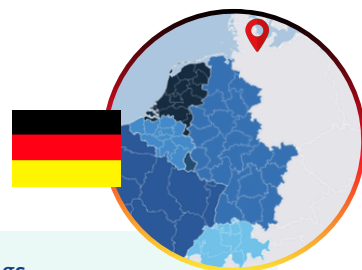
### What is expected from the HoliCow project?

Some motivation for the next generation.

We hope that people can start giving a higher priority to agriculture again. Easy ideas to make the work easier and more efficient would be great.



# HAUSCHILDT GBR



Klaus Hauschildt



Dairy farm + female offsprings.  
Cash crops: canola, wheat, barley, sugar beet



Kükels, State Schleswig-Holstein,  
North German Plain region, Germany



146ha crops, 34ha grasslands. 14m altitude,  
eastern of the Hügelland (type of landscape  
consisting of low rolling hills)



## HISTORY

*Our farm has been in our family for generations. Klaus took over in 1997, and since 2023, we have managed it as a civil law association (GbR) with Jonas. We focus on Red Holstein, with 20% Black Holstein, and installed photovoltaic panels in 2009. While we don't do direct sales, we founded a partnership in 2006 for resource trade, machinery, and services.*

*A major fire in 1866 led to rebuilding at our current location. The house dates back to 1867, with newer farm buildings.*

*Our team: two managers, one employee, one trainee, plus occasional help.*



## DAIRY HERD

COWS	138 MILKED COWS	120 FEMALE OFFSPRING	80% RED HOLSTEIN	20% BLACK HOLSTEIN
BREEDING METHOD	80% ARTIFICIAL INSEMINATION (AI)		20% NATURAL MATING	
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	140 PER YEAR	26.8 MONTHS AT FIRST CALVING	CALVING INTERVAL: 408 DAYS	



## FARM MANAGEMENT



Access to outdoor exercise area for cows: 3 hours for 5 months.  
Young cattle > 1 years old: summer grazing ~6months



Monoslope barn for cows, free stall for young cattle, robotic feed pusher




Feeding once per day through feed mixer wagon + robotic feed pusher. Young cattle: feeding twice a day

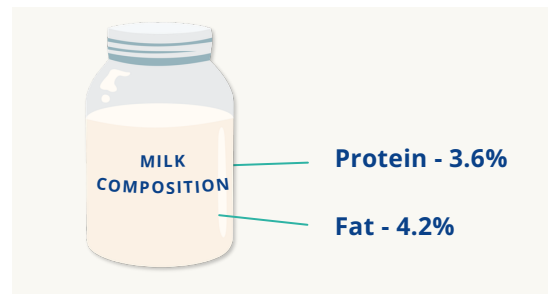


Monoslope barn with ample indoor and outdoor space, fans, brushes, "Haltungsform 3" and "QM++" welfare labels. We use the Heatime® app for heat detection and cow monitoring.



## MILKING SYSTEM

MILKING PARLOUR	HERRINGBONE 2X10 BUILT IN 2003
 PRODUCTION	32 L/COW/DAY
	10,000 L/COW/YEAR
	40,000 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We record milk for production and yield monitoring, health tracking, and overall management. This is **highly useful, as individual results are important**, and all data is accessible via computer and app, ensuring availability for vets, advisors, and employees.



## PRIORITIES

Milk production under the "Haltungsform 3" label for Arla®, meeting all required standards. We participate in agricultural climate protection measures and hold the "QM++" certification. Our farm works with advisors for milk, crops, and nutrients.

## STRENGTHS



### & WEAKNESSES

Our farm is a family farm and therefore a family business. Flexibility is a great strength. Slightly inconvenient/unfavourable infrastructures.



## THE FUTURE

Our next project is to build a new house/accommodation.

### What is expected from the HoliCow project?


Simplification of the daily workload would be desirable.



# OUR FARMS IN Nordrhein-Westfalen, GERMANY

North Rhine-Westphalia's dairy sector is anchored by robust livestock populations, with increasing herd sizes over time. The average dairy herd size in 2024 was of around 80 cows in NRW. Dominant breeds include high-yielding German Holsteins, comprising approximately 46 % of purebred dairy cattle, prized for their productivity.





Territorially, dairy farms in NRW are dispersed across diverse landscape: from fertile lowlands to rolling uplands and benefits from proximity to major markets and strong rural infrastructure. As in Northwest Germany generally, NRW contributes substantially to national milk output, thanks to its agricultural density and accessibility.

Production in the region aligns with broader German trends: nationwide milk output rose approximately 10 % between 2010 and 2023, largely following the removal of the milk quota in 2015, and has since held steady at around 33 million tonnes. NRW participates actively in processing specialized dairy products, including ultrafiltered milk and possibly premium labeled items.


Consumer trends show evolving patterns: domestically, per capita consumption has declined in recent years, with Germans averaging around 23.8 kg of cheese and 46 kg of drinking milk annually in 2023. In NRW, the school milk programme has seen reduced demand in part due to lower subsidies, logistical constraints, and changing preferences.



# SANDER GBR



 **Stefan Sander**

 **Dairy farm with own offspring, fodder production**

 **Hünxe, State Nordrhein-Westfalen, Niederrhein region, Germany**

 **Lowland, 50% Pastures - 50% Crops**



## HISTORY



*“Our family farm spans two generations. We took over the farm in 2019 and focus on Black Holstein, known for its high milk production. Our team consists of two dedicated farmers, ensuring efficient and sustainable operations.”*



## DAIRY HERD

COWS	143 ANIMALS	123 DAIRY COWS	140 YOUNG CATTLE	BLACK HOLSTEIN
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)			
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	200 PER YEAR	25 MONTHS AT FIRST CALVING	CALVING INTERVAL: 431 DAYS	



## FARM MANAGEMENT



*No grazing*



*Free-stall with fans and brushes.*




*Total mixed ration (TMR), performance feed on the robot*

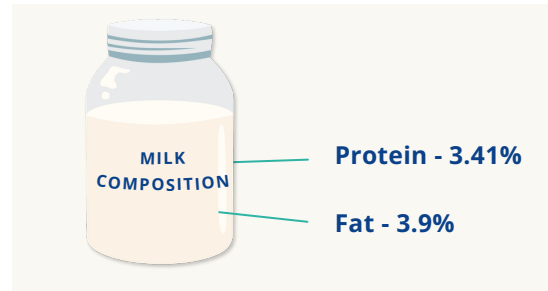


*Activity monitoring, robot scraper*



## MILKING SYSTEM

MILKING PARLOUR	2 LELY ROBOTS
 PRODUCTION	11,513 L/COW/YEAR
	32 L/COW/DAY
	42,826 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We milk record every four weeks, completing 11 tests per year. This helps us monitor udder health through cell counts and contributes to breeding value estimates as part of the herdbook farms. **The data is essential for managing herd health and optimising feeding strategies.**



## PRIORITIES

The priority is to have high-performance milk production through good herd health. The animals are also sold at auctions and breeding is an important part of the business.

### STRENGTHS

#### & WEAKNESSES

Our modern production technology is the farm's main strength. The small amount of land owned is a weakness in terms of future developments.



## THE FUTURE

We have the project of building a bunker silo.

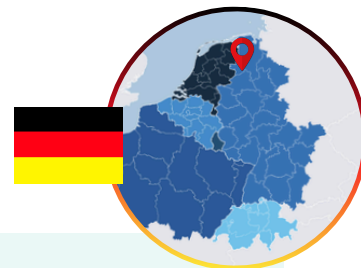
### What is expected from the HoliCow project?

We are looking forward to the added value from the health data.






# MILCHVIEHBETRIEB LILIE



 Cord Lilie

 Dairy farm, biogas production, photovoltaic panels

 Stemwede Haldem, Land Nordrhein-Westfalen Nördliches Ostwestfalen region, Germany

 North German plain, flat.  
73ha total, 55ha pastures, 18ha crops (maize silage)



## HISTORY



*“Our family farm spans three generations. We took over in 1995, the same year a fire destroyed the farm, forcing us to rebuild from the ground up. Since then, we have expanded significantly, growing our herd from 50 to nearly 400 and starting biogas production. Today, our team consists of 6 to 7 full-time workers, ensuring the farm’s continued success and sustainability.”*



## DAIRY HERD

COWS	380 COWS	322 MILKED	BLACK HOLSTEINS	THE YOUNGS ARE NOT BRED ON THE FARM
BREEDING METHOD	SELF-MADE ARTIFICIAL INSEMINATION (AI)			
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	450 PER YEAR	24 MONTHS AT FIRST CALVING	CALVING INTERVAL: 376 DAYS	



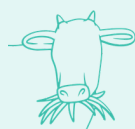
## FARM MANAGEMENT



No grazing



3 free stalls  
(side by side)




Only total mixed ration  
(TMR)

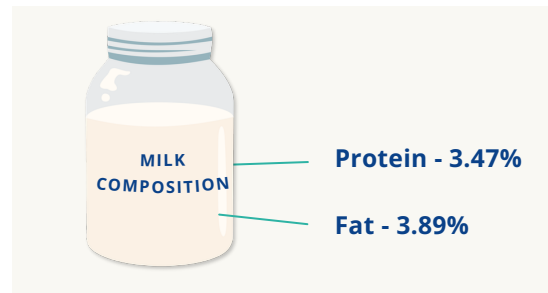


Fans, brushes, water  
sprinklers, activity sensors  
on cows.



## MILKING SYSTEM

MILKING PARLOUR	3 MILKINGS PER DAY
	18-UNIT INTERNAL ROTARY MILKING PARLOUR
 PRODUCTION	12253 L/COW/YEAR
	30.8 L/COW/DAY
	35,935 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We milk record every four weeks. This helps us with herd management, monitoring milk yield, and tracking cell counts for udder health. **The data is precious for maintaining udder health and optimising feeding strategies.**



## PRIORITIES

- Healthy cows that give a lot of milk.
- Fertility, we have a pure dairy farm, so the milked cows are at the centre of everything.

## STRENGTHS & WEAKNESSES



- The focus on one single thing (milking) optimises the performances
- Low diversification of the farm makes us vulnerable to market fluctuations

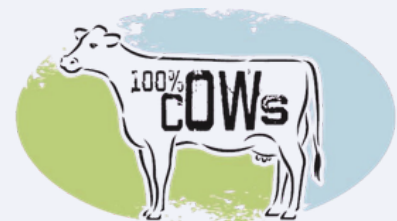


## THE FUTURE

Our milking technology is 30 years old and will have to be replaced in the future.

### What is expected from the HoliCow project?

We hope to get new knowledge and information to monitor our herd.



Milchviehbetrieb Lilie

# OUR FARMS IN Baden-Württemberg, GERMANY

The dairy sector plays a vital role in the Baden-Württemberg agricultural landscape, characterized by a diverse range of livestock. The predominant breeds include Simmental (40%), Holstein (35%), Brown Swiss (20%), Vorderwald (2.5%), and other breeds (12.5%), with a total population of approximately 309,000 dairy cows.



Geographically, dairy cows are distributed across Baden-Württemberg in a manner that reflects the unique territorial characteristics. The diverse landscapes of Baden-Württemberg, including the hills of the Swabian Alb, fertile plains along the Neckar and Rhine River, and the mountainous regions of the Black Forest, provide ideal grazing and cultivation conditions, contributing to the overall health and productivity of the herds. Baden-Württemberg is one of the federal states with the highest proportion of grassland, which plays a very important ecological role as a CO<sub>2</sub> reservoir.

In terms of production, Baden-Württemberg produces approximately 2,2 million tons annually, with a variety of products including cheese, yogurt, and butter. Many of these products are recognized with quality labels, which highlight their regional significance and adherence to high standards. Consumption trends in Baden-Württemberg have evolved, with a growing demand for organic and locally sourced dairy products. Recent studies indicate that consumers are increasingly prioritizing sustainability and health, leading to a shift in purchasing habits towards organic dairy products, premium regional cheeses, and plant-based alternatives. This evolution reflects a broader awareness of dietary choices and their impact on health and the environment.







# ARMBRUSTER GBR



 *Armbruster, Daniel and Manuel*

 *Mixed farming with livestock, biogas and forest*

 *Stühlingen, Baden-Württemberg, Hochrhein-Bodensee region, Germany*

 *Foothills of the Black Forest. 85ha crops, 43ha pastures, 15ha forest*



## HISTORY



*Our farm has been in the family for three generations. In 2012, we founded the GbR partnership and took over the farm. A key milestone was the installation of a milk robot in the old barn in 2018. Our team consists of two dedicated members.*



## DAIRY HERD

COWS	90 COWS	50 DAIRY COWS	HOLSTEINS
BREEDING METHOD	DAIRY COWS: ARTIFICIAL INSEMINATION (AI)		BEEF CATTLE: NATURAL MATING
CALVING PERIOD	ALL YEAR LONG		
CALVINGS	40 PER YEAR	28 MONTHS AT FIRST CALVING	CALVING INTERVAL: 460 DAYS



## FARM MANAGEMENT



*No grazing*



*Free stall with drive-through feed alley*




*Partly Total mixed ration (TMR) with grass and maize silage, hay, molasses, grains, protein. Milk performance feed, balancing ration via the milking robot.*

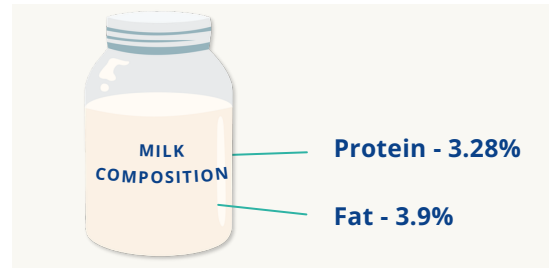


*Misting system, brushes, activity monitoring through Lely collar sensors.*



## MILKING SYSTEM

MILKING PARLOUR	MILKING ROBOT LELY A5
 <b>PRODUCTION</b>	22-28 L/COW/DAY
	7,580 L/COW/YEAR
	25,761 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We milk record every 4 weeks, but **for the project, we're recording weekly for 1.5 years**. This helps with performance monitoring, detecting health issues, breeding work, and pregnancy detection through milk pregnancy tests. It's very useful for tracking components like urea concentration to adapt feed, pregnancy, and yield for selection. We receive the data via mail, email, and our herd management platform/app.



## PRIORITIES

- Carbon footprint via the dairy, "QM+" label for cow welfare, "Haltungsform 2" label (housing conditions)
- Flexibility in the work thanks to 2 farm managers

### STRENGTHS & WEAKNESSES

Difficulties to move around the farm because there are lots of forest all around and steep slopes.



## THE FUTURE

We'd like to convert and extend of the barn to achieve the next housing level, "Haltungsform 3".

We'd also like to reach higher animal welfare levels and better animal health in summer thanks to fans. There is also the possibility to buy an automatic feed pusher.

### What is expected from the HoliCow project?

Improved early detection of mastitis via milk monitoring.

Improvement of overall animal health through various analyses.

Advice on animal health and the barn.





# KURETZHOF



**Martin Fritsch**

**Dairy farming, grasslands, crops, biogas production**

**Zell am Hammersbach, Baden-Württemberg, Black Forest region, Germany**

**Low mountain range. 105ha: 45ha crops, 60ha permanent pastures**



## HISTORY



“Our farm has been in the family for five generations. We took over in 2008, and since 2006, we’ve been involved in biogas production. The team currently consists of two people.”



## DAIRY HERD

COWS	65 DAIRY COWS	HOLSTEINS
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)	
CALVING PERIOD	ALL YEAR LONG	
CALVINGS	45 PER YEAR	26 MONTHS AT FIRST CALVING
		CALVING INTERVAL: 415 DAYS



## FARM MANAGEMENT



No pastures



Free stall with elevated stalls and milking robot




Mixed ration and concentrate in the milking robot

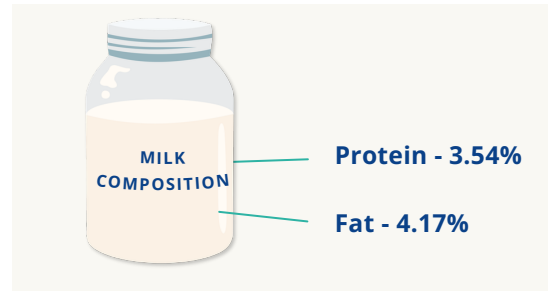


Milking robot, robotic scraper, sensors (feed intake, rumination, activity), weather station, automatic fans controlled by a thermostat



## MILKING SYSTEM

MILKING PARLOUR	MILKING ROBOT
 PRODUCTION	31 L/COW/DAY
	10,000 L/COW/YEAR
	25,000 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We milk record monthly to measure performance, breeding value, health status, and manage the herd. **It's useful for tracking milk composition, cell count, and lactation performance.** We receive the results online and on paper.



## PRIORITIES

- Profit
- Work efficiency
- Animal welfare



## THE FUTURE

### What is expected from the HoliCow project?

Progress in terms of animal welfare, health, metabolism, fertility thanks to milk recording data. Interaction with other farmers, in particular farmers from other countries.





# KRESSER



**Kresser Jürgen**

**Dairy farm**

**Leutkirch, State Baden-Württemberg, Allgäu region, Germany**

**Meadows and pastures**



## HISTORY



*Our farm has been in the family for 2 generations, with ownership taken over in 2016. **Over time, the farm has grown, and performance has increased.** Key milestones include the purchase of a milking robot, barn extension, receiving the "Haltungsform 3" housing quality label, and adding a feed mixer wagon. Our team consists of three people.*



## DAIRY HERD

COWS	125 ANIMALS	70 DAIRY COWS	BROWN SWISS (BRAUNVIEH)
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		
CALVING PERIOD	ALL YEAR LONG		
CALVINGS	80 PER YEAR	28.5 MONTHS AT FIRST CALVING	CALVING INTERVAL: 412 DAYS



## FARM MANAGEMENT



*No pastures*



*Free stall, fans and brushes.*



*Grass, hay (1st and 2nd cut)*

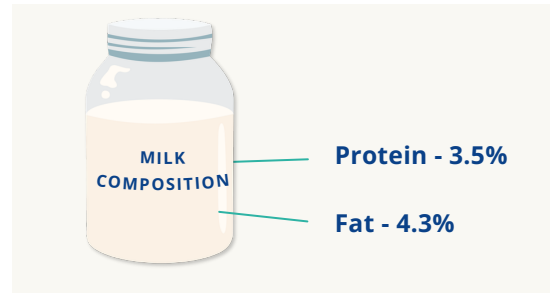


*Hay dryer, milking robot, manure cleaner robot*



MILKING SYSTEM

MILKING PARLOUR	MILKING ROBOT
PRODUCTION	8,899 L/COW/YEAR ON AVERAGE



MILK RECORDING



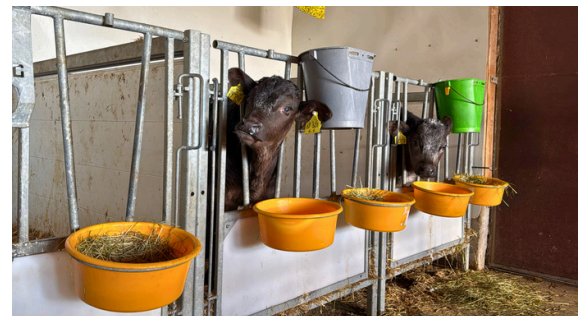
MONTHLY

We record milk for **production and health monitoring**, with advice from our advisors. It's useful for tracking production data, health, and fertility.



PRIORITIES

- Fertility
- Welfare
- Re-seeding (lots of clover)
- Animal care and animal welfare



THE FUTURE

What is expected from the HoliCow project?


To get better information about our animals.



# OUR FARMS IN LUXEMBOURG

Dairy production is an important part of Luxembourg's agricultural sector. With a large number of farms specializing in the production of high-quality milk, this sector contributes significantly to the local and overall agricultural economy. Luxembourg's temperate climate and fertile soils, as well as the relatively high proportion of permanent grassland, generally provide ideal conditions for livestock farming. The most common breeds in milk production are Holstein, Braunvieh and Montbéliard. One special feature is that, for historical reasons, slightly less than half of the milk is exported to Germany.



A photograph of a rural landscape. In the foreground, two cows are lying in a lush green field. One is black, and the other is black and white. In the background, there are several farm buildings, including a red barn and a white house, surrounded by trees. The sky is filled with large, white, fluffy clouds.

Most dairy farms in Luxembourg are family-run and attach great importance to sustainability and animal welfare. Many farms are certified according to several local and European standards and rely on sustainable production methods. This not only guarantees the quality of the products but also protects the environment.

As in many other countries, the Luxembourg dairy sector is facing challenges such as price and cost pressure and increasing demands for sustainability. In recent years, milk production in Luxembourg has been increasingly confronted with the issue of ammonia. According to the EU directive, ammonia emissions are to be reduced by around 22%. This represents a major challenge, as agriculture is by far the largest source of ammonia in Luxembourg.

In addition, the last agricultural reform turned out to be an administrative barrier, which has led to many unnecessary problems in practice. Nevertheless, the industry remains optimistic and is continuously investing in innovations and new technologies to make production more efficient and environmentally friendly.



# HAFF WEIRICH



Romain Weirich

Gostingen village, Mosel region, Luxembourg

Mixed farm, dairy and beef breeds, suckler cows, bull fattening. Winery and educational farm.

Hilly, extensive region, wine region. 60% permanent pastures 40% crops including 13% maize



WATCH NOW



## HISTORY



*“Our farm has been in the family for one generation, with ownership taken over in 2000. Over the last 25 years, we’ve expanded milk production and made significant investments in dairy operations. Key milestones include the first milking robot in 2009, a feeding robot in 2015, and major construction phases in 2001, 2014, and 2019. Our team consists of one person, with occasional help from MBR (occasional farm hands) for work peaks, such as silage work.”*



## DAIRY HERD

COWS	144 DAIRY COWS	BLACK HOLSTEIN: 114	ROTBUNT: 8	BROWN SWISS: 7	CROSSBREDS: 15
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		NATURAL MATING		
CALVING PERIOD	ALL YEAR LONG				
CALVINGS	147 PER YEAR	25.4 MONTHS AT FIRST CALVING	CALVING INTERVAL: 392 DAYS		



## FARM MANAGEMENT



Pastures: 5,5 months



Free stall, brushes, 6 fans in stall, mobile curtains on the side of the barn




- Grass and maize silage + protein concentrate (soya and rapeseed)
- Energy mix (beet pulps and maize)
- 20er mix

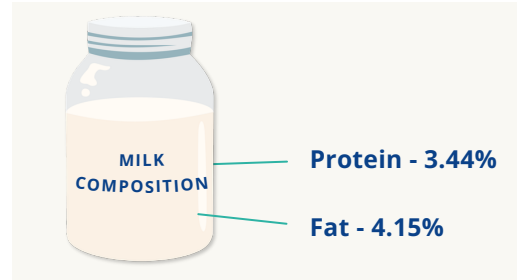


Scales included in the milking robot, feeding robot, chewing frequency through sensors, feeding behaviour



## MILKING SYSTEM

MILKING PARLOUR	2 MILKING ROBOTS
 PRODUCTION	14.9 L/COW/DAY
	9,886 L/COW/YEAR
	26,577 L/COW/LIFETIME



## MILK RECORDING



### MONTHLY

We record milk every 4 weeks for an **optimized overview of herd management** and as a database for livestock insurance. It's definitely useful to us.



## PRIORITIES

- The general aim of the farm is to have additional sources of income alongside livestock farming, in this case the winery and fruit growing.
- We promote agriculture through the activities of the educational farm.
- We are also representatives at the local municipal council.
- Electricity storage and direct utilisation of the electricity from the photovoltaic system.
- We participate in the CONVIS Sustainability Audit & Luxlait Audit.
- We work actively on preserving biodiversity at the farm.
- We take agri-environmental measures in the area of nitrogen reduction.

### STRENGTHS

High flexibility thanks to the milking robot

### & WEAKNESSES

Overall cost-intensive due to high degree of mechanisation



## THE FUTURE

No major investments are planned in the immediate future for the farming part. However, investments are to be made in a power battery due to the increasingly high electricity costs and the significant power consumption of the milking robots and the feeding robot.

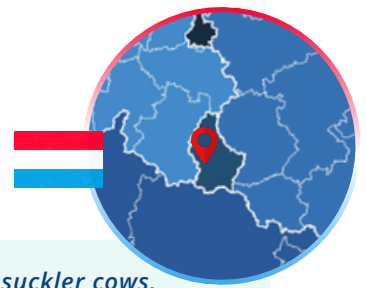
### What is expected from the HoliCow project?

To get additional information on milk quality and to be able to better filter out and recognise problematic cows at an early stage, regardless of the topic.





# HENRI HENNICOT



Henri Hennicot

Eltz village, Central-West region, Luxembourg



Mixed farm, dairy and beef breeds, suckler cows, bull fattening, grain production for self-consumption



Hilly, medium-intensive region, water protection area. 70% permanent pastures, 30% crops including 15% maize.



WATCH NOW



## HISTORY



"Our farm has been in the family for one generation, with ownership taken over in 1992. Over time, we've increasingly focused on extensified milk production **and are planning a breed change from Rotbunt and Brown Swiss to Montbéliardes**. Classic grazing remains a key part of our operation. Key milestones include major construction phases in 1992, 2000, and 2012. Our team consists of one person, with occasional help from MBR, an association for finding occasional farm hands, for work peaks, such as silage work."



## DAIRY HERD

COWS	44 DAIRY COWS	BLACK HOLSTEIN: 5	ROTBUNT: 14	CROSSBREDS (BROWN SWISS): 25
BREEDING METHOD	ARTIFICIAL INSEMINATION (AI)		NATURAL MATING	
CALVING PERIOD	ALL YEAR LONG			
CALVINGS	56 PER YEAR	35 MONTHS AT FIRST CALVING	CALVING INTERVAL: 380 DAYS	



## FARM MANAGEMENT



Pastures: 6 months/year



Free stall





Grass and maize silage + different mixes with self-produced grains + mix from soya and rapeseed



Brushes in stall and fans in the milking parlour



## MILKING SYSTEM

MILKING PARLOUR	HERRINGBONE MILKING PARLOUR	 <p>MILK COMPOSITION</p> <ul style="list-style-type: none"> <li>Protein - 3.46%</li> <li>Fat - 4.57%</li> </ul>
 <p>PRODUCTION</p>	8.6 L/COW/DAY	
	5,838 L/COW/YEAR	
	16,375 L/COW/LIFETIME	



## MILK RECORDING



### MONTHLY

We milk record every 4 weeks for **an optimised overview of our cows** and for efficient herd management. It is also useful as a database for livestock insurance.



## PRIORITIES

- Participation in CONVIS sustainability audit as part of the Cactus beef label & Luxlait audit.
- Participation in agri-environmental measures and biodiversity programmes related to water protection in the municipality of Redange/Attert for 25 to 30 years as a preventive measure and for cost reasons. In particular: mechanical weed control of maize + band spraying (herbicides).
- Animal welfare issues are very important: healthy animals bring economic benefits.

### STRENGTHS

Very high feed self-sufficiency

### & WEAKNESSES

High workload 



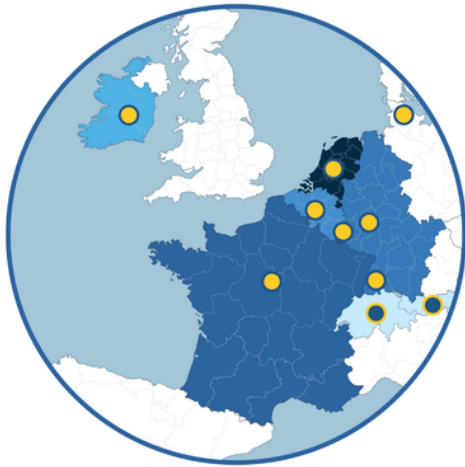
## THE FUTURE

We have the project of covering the slurry tank because of the ammonia issue in Luxembourg.

### What is expected from the HoliCow project?

- We have high hopes that AI (artificial intelligence) will become very useful as a management aid.
- HoliCow tools will probably be cheaper than sensors.
- The measurement of cheese characteristics may be interesting for Luxlait dairy.
- High interest in animal welfare issues.
- An environmental screening may be interesting for water protection.





Our partnership is composed of 12 partners in six countries: Belgium, France, Germany, Ireland, Luxembourg and the Netherlands. Two associated partners from Switzerland and Austria also participate in the project.

We have worked together on several Interreg NWE projects since 2012. We are a solid team with very motivated people working together to achieve the goals of the HoliCow project!



Associated partners:



## GET IN TOUCH

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# THE HOLICOW PROJECT

2023-2027

