

Adam Warnke

Gajewo, Poland

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Farming is not just a job to me; it's a passion and I feel incredibly proud to be able to maintain the farming tradition that was started by my parents. I want to be the best I can be, focusing on sharing new ideas and opportunities to keep one step ahead.

Adam Warnke



Introduction to Polish Production

Poland, officially the Republic of Poland, is in Central Europe and is divided into 16 administrative regions. The country covers an area of 312,696 square kilometers (120,733 square miles) and has a population of nearly 38.5 million people.

Bordered by both land and water, Poland has a Baltic Sea coastline to the northwest and shares borders with seven neighboring countries — the Russian Federation of Kaliningrad, Lithuania, Belarus, Ukraine, Slovakia, Czechia and Germany.

Poland is an important producer of both agricultural and horticultural products in Europe. Almost 50% of the country's land mass (15.4 million hectares/ 38 million acres) is used for

agricultural production. Poland has in excess of two million, family owned, agricultural holdings. The average holding size is a modest nine hectares (22 acres), however an increasing number of larger, more specialized, agricultural holdings are being formed.

Rye, wheat, barley and oats are Poland's most important cereal crops. With fodder crops and root crops such as potatoes and sugar beet also being grown extensively. As an important meat producer, Poland currently ranks fourth in the European Union for the production of pork and poultry and seventh for the production of beef. With an estimated total cattle inventory of 6.18 million head (January 2020), Poland's cattle production is mostly concentrated in the northeastern and central regions. Of the 28 EU member countries, Poland recorded the largest dairy herd expansion in 2018. Throughout 2019 the country's dairy production remained stable, with dairy cow inventories reaching an estimated 2.23 million head.



6.18m

estimated total cattle (2019)

2.23m

estimated dairy cows (2019)

10th

largest supplier of beef to McDonald's

Introduction to Adam Warnke

Adam's parents, Waldemar and Barbara Warnke, purchased the farm in 1972. Located in a rural area of Poland called Gajewo, four generations of the Warnke family currently live on the farm — Adam and his wife Paulina, their three children Aleksy, Tymon and Iga, Adam's parents and his grandmother.

Covering a total area of 72 hectares (178 acres), the Warnke farm has a dairy herd of 75 Friesian Holstein cows. Milk production is an important factor for the farm, with milk yields averaging 10,300 kilograms per cow, per lactation.

Dairy cows are on a year-round calving pattern to maintain a consistent supply of milk to the local co-operative, heifers are retained and reared on the farm as replacements for the dairy herd and male calves are sold at a few weeks of age for rearing.

Investment in new dairy cow facilities started in 2008 with a successful application of grant funding. Through the Polish 'Young Farmer' program, Adam was awarded zł 500,000 Polish Zloty (\$120,500) of working capital to support the construction of a new barn and milking facilities. Constructed in under two months, the barn was designed around a single robotic milking system — with free access cubicles and feed passage.



Image: Adam with his wife, Paulina and their three children



178
acres of land

75
dairy cows

Introduction to Adam Warnke

The new facilities have been designed to provide the optimum environment for the cows during the warm summers and cold winters. Passageways are fitted with an automated scraping system for the regular removal of slurry. The slurry is stored in an underground tank and is spread on the farm's grassland, either after grazing or cutting for silage. Cows are fed daily with a total mixed ration (TMR), the balance of nutrients ensures that the maintenance requirements are met to produce 24 liters of milk, per cow per day.

The concept behind the new barn and facilities has been to automate many of the more routine jobs and tasks on a dairy farm, especially milking. Adam sees the investment in automation as a priority — leading to a good work-life balance and helping to improve animal health and welfare.

Adam studied at the University of Life Sciences in the Polish city of Poznań and has also lived and worked in the United Kingdom.

After returning home to Poland and beginning to take over the management and day to day running of the family farm, Adam knew that he wanted to focus on innovation and technology as a way to improve time efficiency. His focus and drive has meant he has won several accolades from both the local community and the dairy cooperative he supplies. Between 2012 and 2014 Adam was elected as a councilor for his local district of Czarnków and in 2015 he became the second vice-chairman of the Commune Council.

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Consumers are increasingly interested in how their food is grown and produced. We need to change and adapt to ensure we meet this increasing interest.

Adam Warnke



Sharing and Implementing Sustainable Practices

Core Values and Goals:

- Continue to innovate and automate farm routines to reduce labor requirements and improve work-life balance
- Increase the value of the business for the next generation, by developing it in an economically viable way
- Implement practices that protect and improve animal health and welfare
- Collaborate with other farmers to share knowledge and best practice – improving sustainability



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Being the third generation in our family to work for the local community as a councilor is a great privilege. Helping create solutions to issues affecting local people and businesses is incredibly important. Working together creates a strong sense of community, which is vital for the success of rural areas.

Adam Warnke



Sustainability Objectives



Environment

- Optimizing grassland productivity through careful management and integration of new practices
- Using slurry injection to reduce runoff and nutrient loss — protecting water sources and increasing availability of nutrients for grass growth

Economics

- Utilizing sexed semen on heifers to help accelerate genetic improvement, while reducing the number of lower value male calves being produced
- Increasing use of automation to help reduce labor requirements and their associated costs
- Targeting capital investment aimed at increasing and improving productivity and efficiency of the dairy herd
- Providing actionable interventions to improve outcomes including productivity, health and welfare through electronic monitoring of dairy cows and the milk they produce

Ethics

- Investing in new facilities and technology to help maintain a good work-life balance
- Collaborating and engaging with local farmers and industry organizations to help identify, improve and develop new practices to support knowledge transfer
- Using facilities and equipment that are aimed at improving and supporting the natural behaviors of the cows including free access cubicles, access to outside space, brush grooming and robotic milking
- Working with the local council to help support the community

Robotic Milking

As the Warnke farm has been actively looking for technical solutions to replace staff, the decision to begin using robotic milking was an obvious choice. The move towards robotic milking has removed the need to manually milk cows and has provided a significant time saving over a milking parlour.

Not only has robotic milking reduced Adam's labor requirements, it has also provided greater flexibility around milking frequency — which can be tailored to an individual cow's yield and lactation stage. Increasing milking frequency can help reduce stress on the udder, which is especially important in early lactation. Reducing pressure on the udder and stress on the ligaments improves cow comfort, especially when lying. Cows can also choose to set their own milking schedule — replicating a more natural pattern and allowing the cow to manage her daily time budget based on her needs, not a set milking routine.

The robotic milking system tracks milk flow for each individual quarter, automatically stopping milking each teat at a predetermined flow rate. This robotic method decreases the risk and occurrence of mastitis by avoiding over-milking the quarters. Additionally, the system has mastitis detection — which measures and reports on somatic cell count (SCC), providing early detection and identification for treatment.



Key Outcomes & Actions

- One robotic milking system reduces staffing requirements by half of a full-time labor unit
- More time can be focused on herd management
- 2.4 milkings per cow per day (2.8 at peak lactation) improves milk yield by >10% and improves udder health
- Cows choose when to be milked, improving their time budget which reduces stress
- Early detection of intramammary infection reduces severity, improves control and limits milk quality penalties

Natural Behaviors

As livestock producers have a responsibility for their animal's quality of life — animal welfare is the foundation of any livestock production system. A key consideration of the development and construction of Adam's barn and facilities was to support cow welfare. Research has shown that cows will dramatically increase their time scratching (by over 500%) when provided with a mechanical brush. They also decrease the frequency of head scratching, which is a repetitive behavior associated with boredom. A mechanical brush has been provided for the Warnke farm cows, allowing them to perform grooming as part of their natural behaviors.

The Warnke farm cows have also been provided with outdoor access to a pasture loafing area. This excellent space allows the cows to exhibit more of their natural behaviors. The additional space provided can also help decrease the number of negative social interactions between cows and is thought to improve the positive effects on their social interactions and behavior.



Key Outcomes & Actions

- The mechanical brush fulfils some of the cow's natural behaviors, helping to keep the animal clean and reducing boredom related stress
- Providing a suitable outdoor area for the cows helps to improve their activity levels
- The additional space allows the cows to undertake positive social interactions and behaviors
- Outdoor access to a loafing area provides an alternative surface (to the concrete areas in the barn) to walk on, helping to improve hoof health



Free Access Stalls & Comfort

For several years, the Warnke farm has provided free-access stalls for their cows. When planning the new barn, free-access stalls were an obvious choice as their chosen system. The stalls in the new barn have been fitted with rubber matting, which are then covered with sawdust. This combination provides the cows with a lying area which is thermally comfortable and soft, yet durable. It is also hygienic and ensures adequate friction to allow the cows to both rise and lie down without slipping.

Unlike Adam, many farms in Poland still rely on tie-stall housing. Tie-stall housing or tethering of dairy cows is also used extensively worldwide, despite some welfare concerns regarding the restriction of movement and limitation of expression of the cows' natural behavior.

Adam sees the provision of well-designed and maintained lying areas for his dairy cows as critical in helping to maintain good health and welfare, as well as support good productivity. It is essential that dairy cows are provided with comfortable lying areas as cows need to lie down for between 10-14 hours per day.



Key Outcomes & Actions

- Free access stalls allow cows unrestricted movement, exercise and ability to perform natural behaviors
- Reduced cow stress and boredom
- Providing a well-designed, comfortable lying area ensures cows can lie down for the required 10 - 14 hours per day, protecting the health & welfare of the animals and maintaining their productivity



Reproductive Management

Adam understands that the failure to accurately detect oestrus is a large economic cost to the farm. Therefore, oestrus detection is a key factor in delivering reproductive success for the Warnke dairy herd. Accurate heat detection requires regular, daily observations of the herd. But, to improve detection rates and save labor, all cows are fitted with neck transponders which track motion and activity levels. During oestrus cows dramatically increase their activity levels. This peak in cow activity is easily identified by the neck transponders, meaning the relevant cows can then be selected for service. This method allows the farm to achieve heat detection rates of up to 90%, whereas some dairy herds are less than 50%.

Female sexed semen is used on maiden heifers. As sexed semen is more expensive and conception rates are a little lower than conventional semen, using it on heifers is a good strategy. Heifers are more fertile and generally the highest genetic merit, so sexed semen can help accelerate genetic progress. The cost benefit of producing a dairy female over a male is also considerable.

Some of the dairy semen being utilized by the farm include 'polled bulls', meaning the calves born do not grow any horns and therefore do not require disbudding.



Key Outcomes & Actions

- Good oestrus detection has improved the reproductive performance of the herd
- 2.2 Inseminations per pregnancy
- Sexed semen used on heifers, which are achieving conception rates to first service of 80%
- Calves from polled dairy genetics do not require disbudding, which reduces the stress on the calf and cost to the farm



Herd Management

Some of the most important factors for managing the dairy herd have been identified as nutrition, reproduction and health. All cows are provided with a total mixed ration (TMR) that covers their maintenance requirements plus 24kg milk. The TMR is pushed up to the feed barrier for the cows by a robotic auger system which operates every two hours. This system ensures feed is re-mixed — helping to reduce selective feeding by the cows and ensuring feed is always easily accessible to the cows throughout the day.

Additional feed is provided to cows based on their yield and stage of lactation. The cows wear neck transponders programmed with their unique identification. The computerized feed station or robotic milking machine picks up the cow's identity and provides extra feed, when programmed to do so.

All cows are foot-bathed each week. Every four months a professional visits the farm to trim and treat the cows' feet. Hoof care is at the forefront of Warnke farm animal care and as a result — the incidence of lameness within the herd is extremely low. Adam recognizes that control and treatment of lameness is crucially important, as lameness is recognized as one of the major health and welfare issues across the European dairy sector.



Key Outcomes & Actions

- The average lactation is currently 10,300kg produced over 305 days
- Automated feed pushing saves one hour per day and helps to improve overall feed intake
- Good health and welfare ensure that replacement rates are low (at 15%), while maintaining 5.5 lactations per cow
- A targeted regular foot care program is helping to minimize lameness



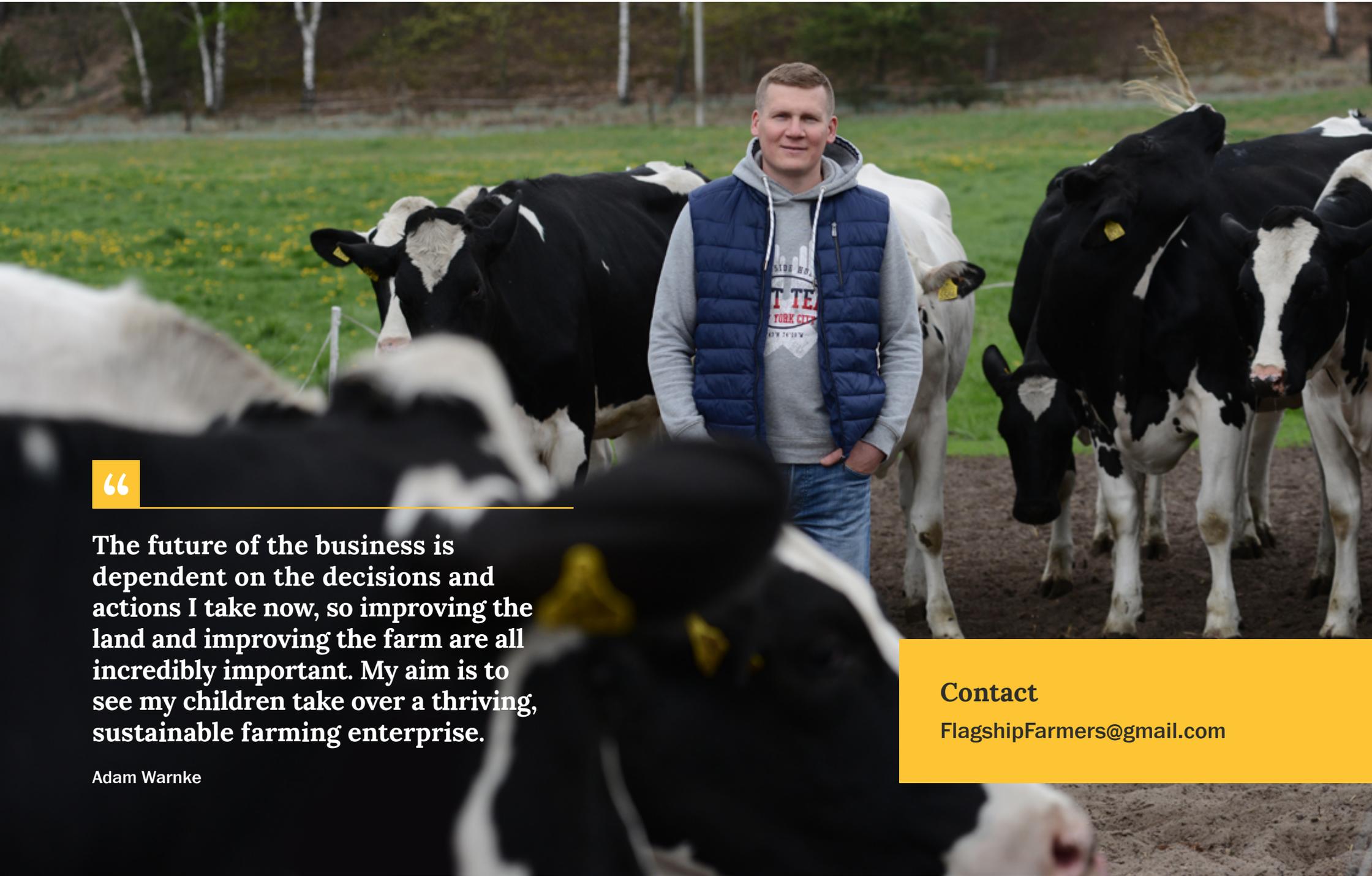
Collaboration

Adam quickly recognized that collaboration is critical for the innovation and improvement of his farming business.

As a big believer in the power of sharing knowledge, Adam regularly gives lectures to help disseminate best practices, data and information. Always looking to learn new ideas and gain knowledge, Adam regularly attends technical meetings, field days and demonstrations.

Adam is also taking part in 'Inno4Grass', a three-year project funded by the European Union's Horizon 2020 fund. The aim of the Inno4Grass program is to bridge the gap between science and new practice, to ensure the implementation of innovative systems on productive grassland farms. The long-term goal of the project is to increase the profitability of European grassland farms, while also preserving their environmental value.





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The future of the business is dependent on the decisions and actions I take now, so improving the land and improving the farm are all incredibly important. My aim is to see my children take over a thriving, sustainable farming enterprise.

Adam Warnke

Contact

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