

Dairy

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Acknowledgements

My thanks go to the European Dairy Farmers who organised a great EDF Congress 2013 in Falkenberg, Sweden. More information on the Congress and presentations are available at www.dairyfarmer.net.

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Sweden: Intensive dairy production and „green walking“

In 2013, the Swedish EDF branch and VÄXA SVERIGE (Scientific EDF partner for Sweden) invited EDF members and guests to Sweden for the annual EDF Congress to learn about high-input and high-output systems which are typical for Swedish dairy production. More than 300 people from different European countries as well as from regions outside of Europe followed the invitation. The venue was the city Falkenberg, 100 km in the south of Gothenburg in the Halland area – a major dairy region belonging to the “Swedish milk belt”.

The EDF Congress combines presentations and speeches in plenary sessions with workshops on individual topics and farm visits to make the visitors familiar with the conditions and systems to produce milk and to learn from the farmers’ strength and challenges. Moreover, the visitors experience the spirit and the values of the European Dairy Farmers club as pointed out in the opening speech of outgoing EDF president JEAN-FRANÇOIS VERDENAL. He asked the guests to consider the EDF Congress as an opportunity to create and cultivate competence which will become more essential in light of the changes and challenges which the dairy sector is facing.

Huge country with varying conditions

Sweden –the focus of the congress this year – is a huge country (distance from north to south = 1,572 km) but only relatively sparsely populated (22 people/km²) as JONAS CARLSBERG (Dairy Sweden) impressively presented. Landscape and climate conditions vary strongly across the country. This, for example, can be seen looking at the average temperature which is 9.4 °C in the south and -0.2°C in the north of Sweden. 73 % of milk production is in the south of Sweden but it also takes place in the north. The regions Halland and Gotland are most important in the Swedish “milk belt”. Dairying is important for the rural areas: One dairy farm creates jobs for five employees in the whole chain. This is especially true for the very Northern regions of Sweden with long winters, long transport distances and less production alternatives.

Difficult years for Swedish dairy production

Milk production in Sweden strongly decreased as JAKOB SÖDERBERG (Växa Sverige) reported: Milk deliveries went down for many years up to 2,861 million kg in 2012. The national quota was not fulfilled for about 10 years (only 79 % in 2011/12). But there is hope that the bottom peak in milk deliveries was reached recently. The majority of the some 4,800 Swedish farms are smaller in size; only about 17 % of the farms have 100 cows or more. The average herd size was about 70 dairy cows per farm in 2012. A large number of the 348,000 Swedish dairy cows are still kept in tied-up barns (47 %). The typical Swedish production system is very intensive with yields of around 9,500 kg of milk per cow in the official milk

recording. Especially the major breeds "Swedish Red and White" and "Swedish Friesian" show very high performance. Organic farming to receive a higher milk price is important in Sweden: The share of organic milk accounts for more than 10 % of total deliveries. To JAKOB SÖDERBERG (Växa Sverige), Swedish dairy production has a high potential especially in the "milk belt" with good grassland. But farmers have to start questioning their system: Is high output really worth such a high input?

Dominating cooperatives

Cooperatives in general play a big role in the Swedish farming sector with regard to advisory, breeding, and also milk collection and processing. ARLA FOODS, a dairy cooperative with about 3,660 members in Sweden, has a dominating position in the Swedish dairy sector as it collects and processes about 72 % of all milk. But this cooperative also has a strong international perspective with regard to milk collection (about 12,000 members in six European countries) but also milk marketing (products marketed to 100 countries). PETER TUBORGH (CEO, Arla Foods) named world-wide globalisation as the force which is strongly driving the ongoing growth and the internationalisation of Arla Foods: "If you cannot participate in the global market and if you are too large for niche production, you will fall one day. Financial strength, competence and enough high-quality raw material are the key factors to success." He pointed at the difference between growth and sustainable growth. "The challenge for dairy cooperatives in today's dairy market is to grow sustainable, to create 'one ecosystem': care for the farmers and fulfil the responsibility you have for society and environment". In this context Arla Foods also thinks about the climate impact of Swedish high input and high-output milk production systems as ANNA-KARIN MODIN EDMAN (Arla Foods) reported to the congress participants. Feed efficiency and use of high-quality forage and by-products are subjects having the potential for further improvements at farm-level.

Next to Arla Foods few other, smaller dairy processors are active in the country. According to the figures JAKOB SÖDERBERG (Växa Sverige) showed milk is processed mainly to fresh milk (43 %). But also a larger share of cheese (30 %) is produced. Only 20 % of the milk is processed to milk powder, mainly for the world market.

High-Input and High-Output production...

The development of Sweden to a high-input and high-output producer took place over many decades as CARIN MARTIIN (Swedish University of Agricultural Science) showed to the visitors. The backgrounds for this development are manifold: The high yields are a consequence of more expensive production systems (e.g. heated or insulated barns needed in many regions due to the climate conditions, shorter vegetations periods, etc.), of the wish to achieve an adequate income and also of political

framework conditions in the past. Sweden entered the European Union and the Common Agricultural Policy in 1995 only. Before, Sweden had a system of a fixed milk price. Swedish dairy farmers face a strong competition since EU accession; the structural change in the sector accelerated.

...causing high production costs

The Swedish high-input and high-output system is quite cost-intensive in recent times as ERIK ENGELBREKTS (Växa Sverige, EDF STAR) explained to the visitors. Swedish EDF farmers, on average, can cover full economic costs only at a milk price of 44.1 ct/kg ECM as the results of the EDF Cost of Production Comparison showed. This is more than EDF farms in other national groups need. Of course also the currency exchange rate, as Sweden is not a member of the Euro-area, has an impact on the Swedish farms' position in the EDF farm comparison. High costs are caused by e.g. double systems (indoor + outdoor as cows need to be kept on grazing fields in the summer months by legislation), adaptations in constructions to climate conditions (insulation, heating), scattered fields and long distances, a shorter vegetation period, higher food security (absolutely no GMO feed) and higher animal welfare standards. Moreover, the high ambitions of farmers and their strong focus on the output side (milk yield) play a role. Also automation gains importance in Swedish dairy farms: capital intensive technologies like milking robots, feeding robots, etc. The quite high costs for farm workers contributed to that. Thus, Swedish dairy farms start making the step from "mechanizing labour" to "automating the brain" as JAN-DIRK VAN MOURIK (Lely) named it. Another weakness of the Swedish dairy farms is the high replacement rate (35.6 %) contributing to high production costs. Many heifers are needed to replace the herds as dairy cows leave the herd after a quite short productive life. Of course genetic improvement is faster due to that. That was illustrated by figures CHARLOTTE HALLEN-SANDGREN (DeLaval) showed the visitors. A late age of first calving (28 months) brings economic disadvantages as well. However, use of antibiotics is low and bio security status is high in Swedish herds (no BVD, no Salmonella, and no Johne's disease) also due to the strong hygienic measures. The visitors of the congress experienced it: All people had to ensure that they have no contact to farm animals within a 48-hour-period before visiting the Swedish dairy farms during the congress.

Compensating special conditions and higher standards

There are no coupled farm payments in Sweden but a strong second pillar as JONAS CARLSBERG (Dairy Sweden, Milk Policy Unit) reported; including environmental support, less-favoured area payments and investment subsidies. The payments are important for the dairy farms next to the single farm payments. The reformation of the CAP therefore is an important issue for Swedish agriculture and especially for dairying. How to

compensate Swedish dairy farms for the natural restrictions and higher production standards with regard to animal welfare and food safety? How to make the Swedish dairy sector competitive in a globalised world? Those are important questions for the whole industry in particular against the background of the very diverse conditions within the country and the importance of the dairy sector for rural areas.

Consumers do not always see the value of the higher regulations: On average, only 50 % of all food consumed is produced in Sweden. Due to high animal welfare standards and GMO-free production in whole Sweden, Swedish agricultural products are more expensive than in other regions in Europe and therefore consumers often decide for foreign products. JACOB SÖDERBERG (Växa Sverige) confirms: Sweden is not self-sufficient in dairy products and other food. But the imported food is not meeting the local rules on animal welfare and food safety as HANS SAMUELSSON (Swedish dairy farmer) remarks. Thus, finding the balance between increasing animal welfare and food standards and a declining economic development in Europe is a challenge. Population and states have to be able to afford higher prices for dairy products.

High feed price challenging high-input and high-output systems

In general, high-input and high-output systems are in particular vulnerable to increasing feed prices as HANS SAMUELSSON (Swedish dairy farmer) pointed out. In the last four years the ratio of milk and feed price has worsened which brought severe problems to the farms. Feeding costs at fluctuating milk prices will be a challenge also for the future which in general does not look too bad: The demand for milk products as highly nutritive food is expected to increase fast. The cow has the advantage to be able to convert cellulose from grassland to high-value food. Who else is able to do this? Thus, the question will be how to produce milk in the future in Sweden? Adapting the existing Swedish production systems to the new conditions will be a big challenge.

High-input and high-output systems to touch

The visitors of the congress could experience the recent strength and challenges of the Swedish high-input and high-output system also during some farm visits. Six Swedish dairy farms opened their doors. Each visitor could see four of them:

- **“Unifying old traditions with visions for the future” at Berte Gård AB:** This farm is owned by the STENSTRÖM family and BERTEBOS Foundation. Today the 13th and 14th generation run the farm. The farm is part of a food industry group, producing milk, flour and ice cream. While the mill is the eldest family business (founded in 1569), the ice cream factory “SIA Glass” produces one of the most famous ice creams in Sweden. The cow barn, newly built in 2011 on the green field, is highly automated: four robots are milking the 240 high-yielding dairy cows (9,429 kg ECM/cow/year). Feeding is also automated. Moreover, the herd management is supported by the DeLaval

Herd Navigator. Only two full-time employees and one part-time employee are needed to run the dairy barn. Recent buildings and installations easily allow an expansion of herd size in the future. First ideas are to add another 300 cows in about five years from now. Basic installations to connect a biogas plant with the barn were also already established. In future days the planned biogas plant will supply energy to the nearby ice cream factory. The capital investment in the site is quite high: 137 000 SEK (about 15 000 EUR) per cow place. Therefore the farm will focus on cost reduction and optimum herd development before investing in more cows. Due to the extremely fast expansion and the buy-in of several cows, average lactation is only at 1.6 at the moment and need to be improved in the near future.

- **“All focus on the cows gives high output” at Guarp:** TOMAS and LISBETH RIBERTH own this farm. They stepped into dairy production in 2002 when they bought the farm. With about 76 dairy cows this farm is a typical Swedish family farm. TOMAS and LISBETH RIBERTH focus on a high-output: nearly 12,000 kg ECM per cow per year are produced. The system which they run is rather simple: Cows are fed with grass silage (round bales plus grazing in summer, no corn silage), concentrates and some by-products only. Feeding components are given separately. Changing to TMR-feeding would require too much capital investments for this small farm. The cows are milked three times a day in a 1x12 side-by-side parlour. Some years ago the idea was to work with a milking robot. But the many problems the RIBERTH family had with it made them changing back to a traditional milking parlour. TOMAS RIBERTH and one employee run the barn activities. They focus nearly exclusively on that. LISBETH RIBERTH is not working on the family farm but on a research farm about 140 km away from home. Most of the field work is sourced out to a contractor. The fields, in particular those used to make grass silage, are far away from the farm. Parts of the land operated by the farm are situated in less favoured areas where an intensive land use is quite difficult (e.g. forest environment, small plots, and long distances). Those areas are farmed extensively e.g. by keeping the farm’s heifers and dry cows on it or by grazing a small sheep herd which the RIBERTH family rent from a neighbour. By this strategy they try to maximise environmental public payments (e.g. subsidies to keep pastures) as an additional income to the farm.
- **“Many branches provide stability in an unstable market” at Skottorps Säteri:** Skottorps Säteri is really a family business. LARS-INGE GUNNARSSON runs his farm together with three of his four kids and the fourth one is processing part of the own milk to cheese. They are supported by a herdswomen and 20 employees. In total 2,100 heads of cattle are managed on 8 different farm sites. Thereof 660 heads are dairy cows with a milk yield above 11,000 kg per cow. First lactation cows are milked at another farm than the older cows to gather special care. Other farm sites keep the beef cattle and the young stock. Next to cattle the farm is also involved in bio energy production (biogas + windmills) and arable production on more than

1,000 hectares of land. Next to wheat, sugar beets, wheat for the mills and barley for beer also potatoes for chips are produced. GUNNARSSON himself spends only half of his time at the farm. He is at the same time involved in the boards of Växa Sverige and Viking Genetics. GUNNARSSON sees a challenge in selecting good genetic material: "A cow should produce milk as long as possible and in the end the farmer has to decide when the cow leaves the farm. Involuntary slaughters due to illness of the cows should be reduced to a minimum to the welfare of the cows and the benefit of the farmer." He explains his rather high culling rate (42 %) with the difficulties of the Swedish market and extraordinary high vet costs. If the vet has to come on a weekend cost easily raise to 500 EUR per treatment. At the same time Sweden does not have a large market for living animals as bio security regulations are high and distances between farms are very long. Due to the strong Swedish currency also the export market is rather dead. GUNNARSSON'S keys to success are cheap building costs (2,300 EUR/cow place without storage) and easy calving: "Cows have to calf easy. Only then they are without pain at the start of the lactation and can walk to the food and water".

- **"Investing for the future with focus on cow comfort" at Ösarps Mjölk AB:** 500 dairy cows, 6 million EUR invested and a lot of optimism for the future development characterise the new dairy barn of AKE and ANNA-CARIN HANTOFT. The HANTOFTS bought the farm in 2001 as their third farm with the current buildings and 220 dairy cows. They then decided to grow to 500 dairy cows and invested into a completely new barn, including a barn for heifers and young stock. Cows will be milked in a 52-point rotary and feeding will be fully automated in the dairy barn. Concentrates will be fed extra in feeding stations. The HANTOFTS decided for an insulated barn and circulation for water in order to be independent from strong winters. Construction work was almost finished the day of the visit, a day later the cows were supposed to be milked for the first time in the new rotary. In order to avoid trouble with the neighbourhood, the HANTOFTS invited all neighbours before their investment decision to learn about their opinions and concerns. No major objections have been raised and even additional land was offered. The HANTOFTS care a lot about their neighbourhood. This implies also no slurry spreading from Fridays till Sundays as the western wind could bother the nearby citizens.
- **"Labour efficiency and high-technology in new facilities" at Högared AB:** This farm is owned by HANS and NISSE KARLSSON. The dairy barn was built in 2012. The farm made very big growth steps in the last two years. Many animals were bought-in which brought some problems with regard to animal health and diseases. The barn is highly automated: three Lely robots are milking the increasing dairy herd. Feeding is also automated. A Triolet Automatic System is feeding the cows with a mixed ration the whole day round. In summer the cows have also access to the grazing fields around the farm for 24 hours a day. The farm decided for automation, in particular with

regard to milking, as they want to milk three times for a milk high yield (10,674 kg ECM recently, being among the 10 % best farms in Sweden in the future) but had difficulties to find Swedish workers who are willing to milk also at night. Combining the access to the grazing fields with robot milking is no problem at this farm. On average the cows achieve up to 3 milking times per day. The good setting of the robots and a rather high concentrate feed supply in the robot ensure it. Besides the dairy business the farm also has a big contracting business with farm machinery, trucks and excavators.

- **“Always neat and tidy” at Gården Olof Lars AB:** This farm is operated by the two brothers FREDRIK and MATTHIAS LINDEBERG. The dairy facilities have been built between 2003 and 2009. They are the fifth generation at this farm. The dairy herd of this farm has been growing since 10 years up to 511 cows recently. Cows get a total mixed ration and have access to the surrounding grazing fields in summer. The cow's milk yield is high (10,678 kg ECM per year) also due to 3-times milking in a 2x16 side-by-side parlour. Animal welfare and hygiene is an important issue at the farm not only with regard to the dairy cows. Young stock, heifers, dry cows and fresh cows enjoy special comfort on straw in a generous barn. Two big bales of straw are automatically distributed in the barn per day. The farm's barns are not insulated unlike many other barns in the region. This means extra work for the farm worker at very cold days (-15°C for 15 to 20 days per year, 1 extra unit) as the manure freezes at the ground and therefore has to be removed by hand. Besides the dairy business the farm also operates a contracting business and produces crops for sale.

Milk production in the far north

HENRIK WAHLBERG, a farmer from the most northern part of Sweden, presented his farm in a speech to illustrate the whole range of conditions and challenges which Swedish dairy farmers face. A cold climate, long winters and a short vegetation period (June-September) are typical for his region. The summers are short but intensive. Due to the midnight sun he is able to harvest three cuts of grass (June, July, and September), which is the base of cow feeding. The midnight sun is making the grass grow 1 cm in 24 hours. The energy value in the grass is high. Land costs are low in his region as there are only very few production alternatives. Usually they are able to rent land for free or can buy land at about 1,000 EUR per hectare. Transportation is a big issue – with regard to milk but also to grain and concentrate feed which is quite expensive. The milk truck is driving 860 km one way to pick up the milk from the farthest farm. The buildings need to be adapted to the cold climate, too, as there are many days with temperatures strongly below 0°C. Record low has been -47°C at his farm; every year they experience temperatures of -35°C. However, the strong winter has also an advantage as there is only a low pressure of pests.