Midland-Tour (August 16, 2024)

(Author: David Eppenberger)

Timetable

06.20 – 7.00	Departure from various boarding stations in Interlaken
08.30	Arrival at Vegetable Farm «Gutknecht Gemüse», Ried b. Kerzers
10.00	Departure for the next visit
10.30	Arrival at Farm of Andreas Scheurer, Kallnach
12.00	Departure for the next visit
12.30	Arrival at Farm of Reto Minder, Jeuss
12.30	Lunch
13.30	Visit to Reto Minder's farm
15.30	Departure for the next visit
16.00	Arrival at Rise-Farm of Léandre Guillod, Lugnorre
17.30	Departure to Vinelz
18.00	Presentation Murten Tourism
18.30	Aperitif
19.00	Dinner
21.00	Departure back to Interlaken
22.00	Arrival in Interlaken

Vegetable Farm «Gutknecht Gemüse», Ried b. Kerzers

The vegetable farm «Gutknecht Gemüse» in Ried b. Kerzers is located in the centre of Switzerland's vegetable garden, as the «Fribourg Seeland» is also known. The company is run by partners Bruno and Karin Gutknecht, Pascal Gutknecht (no relation) and Thomas Etter. The business also includes a certified organic farm at another location in the region. Around 130 hectares of vegetables are grown outdoors and seven hectares are protected in film and greenhouses. Tomatoes dominate here, with 23 different varieties being grown from January to November in above-ground coconut mats that are spread over the fields as organic material at the end of the harvest. Typical vegetables such as leeks, iceberg lettuce, broccoli and cabbage are grown outdoors. Most of these are marketed by the regional producers' cooperative «Gemüse Erzeuger Seeland» (GES) to various customers throughout Switzerland, such as supermarket chain Migros for its regional label «From the region for the region». «Gutknecht Gemüse» also runs a farm shop year- round, where it also sells its own second-class produce that does not fulfil the strict quality criteria demanded by the trade. During the season, around 120 people from eight different countries work on the farm.

The energy challenge

Switzerland has not been spared from the rise in energy prices in recent years. Intensive greenhouse operations, for example with tomatoes, have been particularly affected by the temporary explosion in gas prices. This is mainly used for heating in the cool spring months and for dehumidification in summer. Even before the crisis, the vegetable sector was already looking at alternative heating solutions. A few years ago, Migros, one of the largest buyers of Swiss vegetables, put pressure on greenhouse operators by requiring their suppliers to switch to fossil fuelfree heating by 2025. This caused a lot of movement in the greenhouse sector, which had previously mainly been heating with oil or gas. Since then, vegetable growers have been intensively searching for new heating solutions with fossil fuel-free energy sources. The Swiss Vegetable Growers Association (VSGP) has drawn up a strategy that envisions 80 per cent of Swiss greenhouses being heated with fossil fuel-free energy sources by 2030. By 2050, they should then manage entirely without fossil fuels. The phase-out deadline of 2025 set by Migros is ambitious and is considered unrealistic by many.

Nevertheless, some companies have already converted their heating systems to fossil fuel-free energy sources. Wood heating systems, heat pumps and heating networks are the most frequently chosen solutions. Gemüse Gutknecht has joined a heating network that generates heat from regional wood chips and waste wood. In future, 90 households, numerous industrial companies, public buildings and several vegetable businesses will benefit from this. The combined heat and power plant was completed this year (2024) and is located within sight of Gutknecht Gemüse. Connected via underground hot water pipes, the vegetable farm now fulfills its heating requirements, meeting the requirements of its customers. In addition, a photovoltaic system covering an area of 3,900 square metres produces solar power, which currently covers between 50 and 60 percent of the company's annual electricity consumption. There are already plans to expand the solar system by an additional 1000 square metres. To protect against power outages, there is also a diesel emergency power unit with an output of over 500 kilovolt amperes (kVA), which can cover 100 per cent of the electricity demand.

Market challenge

Society is placing ever greater demands on food in terms of sustainability and ecology. For the Swiss vegetable industry, this means, among other things: Lower yields as a result of the discontinuation of authorisations for proven plant protection products, additional work with mechanical weed control, biodiversity areas instead of vegetables or the aforementioned heating of greenhouses with fossil fuel-free energy sources. In addition, harvest workers should also be paid a decent wage. At the same time, the quality requirements of customers remain high. At least the industry has managed to adjust the official quality requirements somewhat, so that in theory it is now possible to sell vegetables that are not quite perfect. In practice, however, it remains difficult for vegetable farms to cover all the additional costs incurred through higher purchase or end prices. There is a free market for vegetables in Switzerland, and there has been constant price pressure for years, which has now also spread to organic produce.

Cultivation labels are becoming increasingly important in Switzerland and require producers to fulfil additional conditions. For example, IP Suisse requires special environmental and sustainability measures. Most vegetables in Switzerland are marketed via large platform trading companies, which act as intermediaries between producers and buyers. In the case of Gutknecht Gemüse, this is the regional producers' cooperative «Gemüse Erzeuger Seeland» (GES). The company also produces for the IP Suisse or Migros «From the region for the region» labels, as well as on a separate organic farm.

Gemüse Gutknecht, Ried bei Kerzers

- Farm partnership with the partners Bruno and Karin Gutknecht, Pascal Gutknecht and Thomas Etter
- Cultivated vegetables: broccoli, leeks, iceberg lettuce, tomatoes, cucumbers, potatoes, celery, red cabbage, white cabbage, various vegetables for direct marketing
- Growing area: 130 hectares of open land / 7 hectares of foil and greenhouses
- 120 employees (during the season)
- Direct marketing in own farm shop
- Main customer is the Swiss retail trade
- Fossil fuel-free heating of the greenhouses
- 50 to 60 per cent of annual electricity requirements are covered by own solar power

www.gutknecht-gemuese.ch

www.instagram.com/gutknecht_gemuese

A brief portrait of Swiss vegetable production

In 2023, 3,550 vegetable farms in Switzerland produced a total of 411,600 tons of vegetables on an area of 16,800 hectares. That is a share of around 1.6 percent of the usable agricultural area in Switzerland, which is in total 1,042,000 hectares. The value added by vegetables accounted for around 7 percent of total income from agricultural production. Vegetable production is divided into 272,000 tons of fresh vegetables (lettuce, kohlrabi, tomatoes, etc.) on 11,000 hectares, 81,500 tons of stored vegetables (carrots, cabbage, onions, etc.) on 2,400 hectares and 58,100 tons of processed vegetables (beans, peas, spinach, etc.) on 2480 hectares. Carrots (1,500 ha), onions (1200 ha), iceberg lettuce (630 ha) and broccoli (620 ha) accounted for the largest share of the area. The greenhouse area totalled 466 hectares (foil and glasshouses). The number of vegetable farms has increased slightly in recent years in practically all size categories. 2051 farms grew vegetables on less than one hectare, 1292 on 1 to 10 hectares and 211 on more than 10 hectares. At 5,800 hectares, these 211 vegetable farms occupy around 35 percent of the total vegetable growing area. The vegetable-growing cantons with the largest areas under cultivation are Bern, Aargau, Zurich, Vaud, Thurgau, Fribourg and St. Gallen. The proportion of certified organic vegetable cultivation areas is around 20 percent.

Swiss vegetable production covers around 50 per cent of total domestic consumption of vegetables. The domestic share is 90 per cent for carrots and onions, 70 per cent for lettuce and 50 per cent for tomatoes. The share of certified organic vegetables is around 20 per cent. The majority of Swiss-grown vegetables are sold in supermarkets. The proportion of directly marketed vegetables, for example at a weekly market, is estimated to be around five per cent. Imports of vegetables are subject to a special mechanism: during the growing season, imported vegetables are subject to high customs duties. If there is a shortage of Swiss produce for a particular vegetable, import quotas are granted at lower tariffs in order to secure supplies. (Source: Swiss Central Office for Vegetable Production (www.szg.ch).

Further informations: www.gemuese.ch

Organic Farm Scheurer, Kallnach

Andreas Scheurer's organic farm is located in Kallnach in the Bernese Seeland. He is the fourth generation to run the part-time farm and is supported by his parents and his partner. Andreas works full-time as an agronomist at the School of Agricultural, Forest and Food Sciences HAFL in Zollikofen. The herd of Aubrac suckler cows consists of 10-12 suckler cows and their calves. With these animals, Andreas is able to manage his farm in a closed cycle. Grass is grown in the crop rotation. This benefits the soil and also provides food for the cows. In addition to meat, the cows also produce manure and slurry, which can be used as fertiliser in arable and vegetable farming. The free-range herd enjoys with summer grazing and winter exercise as well as bedded lying areas. The calves are not separated from the cows and the animals can thus live out their natural herd behaviour. The feed consists exclusively of grass and hay, all of which is grown on the farm. No concentrated feed is used. The organic natural beef is sold directly from the farm in 10-kilogram mixed packs.
Andreas Scheurers only grows crops for human consumption on the arable land. The crop rotation consists of temporary seeded pasture, wheat, soya, spelt, carrots and golden millet.

The feed for the cows is grown on the two-year-old temporary seeded pasture and other pastures.

On-farm slaughter

The Scheurer organic farm relies on on-farm slaughter, which has been officially permitted in Switzerland since 2020. The animals remain in their familiar environment until the end of their lives and are not separated from the herd. Thanks to on-farm slaughter, they are spared the stress of transport and the slaughterhouse envirionment. According to studies, the cortisol content - the most important characteristic for measuring physiological stress - is on average around twenty times higher in animals that are processed at a slaughter plant than in animals that are slaughtered on the farm. Stress during slaughter can also lead to reduced meat quality. Before each slaughter, the official veterinarian or a veterinary surgeon carries out a live animal inspection to check that the animal is healthy. The animal is then lured with food and restrained in the feed fence. The animal is then distracted and stunned by the butcher with a bolt shot, becoming unconscious. It is pulled into the trailer, where the butcher makes the bleeding cut and bleeds the animal into a collecting tray. The bleeding causes death. No more than 60 seconds may elapse between stunning and bleeding. The carcass is taken to the slaughterhouse where it is skinned and eviscerated. For reasons of hygiene, the time between the bleeding cut and evisceration of the animal must not exceed 90 minutes.

Legal background to on-farm slaughter

Since 1 July 2020, the Ordinance on Slaughter and Meat Inspection (VSFK) has permitted farm and pasture slaughter. Farmers need a licence from the cantonal veterinary office for this. The prerequisite is that a slaughterhouse is located within a 20-minute drive and is prepared to accept dead animals. A trained person, for example a butcher or a farmer with appropriate training, must carry out the stunning and bleeding. The animal must be adequately restrained, for example with self-catching fences for cattle or stunning pens for pigs or small ruminants. Lifting equipment may be required to raise the animals (hay crane, front loader, etc.) and a suitable vehicle for transport to the slaughterhouse. The hygiene requirements must be observed. The blood must be collected on the farm and transported to the slaughterhouse in a sufficiently leak-proof vehicle.

Further information:

http://www.hofschlachtung.ch

www.agrarforschungschweiz.ch/en/2023/06/on-farm-slaughter-less-stress-more-animal-welfare/

https://www.bioaktuell.ch/tierhaltung/tierhaltung-allgemein/schlachtung

Organic Farm Scheurer, Kallnach

- Sideline farm without external employees
- Cultivated area: 19.5 hectares (including 12 hectares of open arable land)
- Animals: 12 suckler cows of the Aubrac breed for meat production
- Crops: temporary seeded pasture, wheat, soya, spelt, carrots and golden millet
- Production method: Organic (according to Bio Suisse guidelines)
- Direct marketing and sale to retailers

  www.bio-scheurer.ch

  www.instagram.com/bioscheurer/

Farm from Reto Minder with conservation agriculture, Jeuss

Reto Minder's everyday work revolves around the soil and closed cycles. He lives with his wife and daughter on the farm in Jeuss in the canton of Fribourg, where he also grew up. He grows crops such as wheat, maize, soya, tobacco and ten hectares of Brussels sprouts on 40 hectares using the no-till method. The latter is considered the supreme discipline among vegetable crops, which is mainly due to the high demands on plant protection. As a result of the discontinuation of active ingredient authorisations, the cultivation of this delicate crop is becoming increasingly difficult. As a result, the production of Swiss Brussels sprouts is declining sharply. However, Reto Minder is sticking to his guns and is considered an expert in Brussels sprout cultivation thanks to his many years of experience. He is convinced that the methods of conservation agriculture help him to keep pest and weed pressure in check. Reto Minder is a consistent advocate of conservation agriculture methods, and not just as President of SWISS NO-Till. "It keeps my soil fertile and makes it more resistant to extreme weather events such as drought or heavy rainfall," he explains his commitment.

Circular thinking is central

One principle of conservation agriculture is the permanent greening of the land, which he also strictly adheres to with special green cover crop mixtures between harvests and especially in winter. Drones are also used to sow the cover crops, which is very quick and also protects the soil. He relies on CULTAN fertilisation. Here, ammonium obtained from human excrement in the sewage treatment plant is placed directly in the soil next to the crops using a special machine. For Reto Minder, this closes a perfect cycle that he believes is still underutilised. He also uses cattle manure and pig slurry as fertiliser. As a livestock-free farm, he gives the straw from his fields to a neighbouring livestock farmer, who then returns it to him in the form of manure, thus closing another cycle. Reto Minder also works his fields with compost tea, which he produces himself. He uses this to introduce microorganisms into the soil, which provide even more life. He regularly carries out soil analyses using the Kinsey method to monitor the development of nutrients and the build-up of humus in his soil.
One of his most important tools is the no-till drill. He uses this for all crops for drill sowing, such as cereals, which he sometimes sows directly into areas that are still green. He also carries out this work on behalf of third parties on a contract basis, as well as treating crops with plant protection products. He has the sowing of individual seeds, for example in maize, carried out by a contractor.

Relay intercropping

Relay cropping, also known as relay intercropping (RI), is a further development of conservation agriculture methods. Here, several crops are cultivated on the same area. In contrast to conventional mixed crops, however, these differ both in the sowing dates and the time of harvest. In other words, the same area is sown twice and harvested twice. As part of a six-year government-funded project, Reto Minder is growing maize together with sugar beet as RI this year. Last year, he already grew wheat and soya as RI. One of the great advantages of RI is the better photosynthesis performance of the plants, he says. With RI, you have to decide on a main crop. It is also about securing yields. One positive effect could possibly be a lower infestation of the glasswinged cicada, which otherwise flies into the sugar beet from cereal fields and infects it with a bacterium.

Further informations

www.no-till.ch

www.strickhof.ch/publikationen/versuchsbericht-relay-intercropping-bio-soja-und-getreide-2021/

Farm of Reto Minder, Jeuss

- Farm manager, 1 employee (50%), 2-6 seasonal employees (April-Dec), parents
- 4 ha winter wheat, 5.5 ha original spelt, 4.0 ha sugar beet, 3 ha soya, 10 ha Brussels sprouts, 3 ha tobacco, 3.5 ha extensive meadows and pastures
- Additional activities: Contract work (plant protection and sowing), operation of local heating network
- Type of production: Conservation agriculture
- Sale of products to the trade

Ecorobotix ARA precision sprayer

During the visit on Reto Minder's farm, the Swiss company Ecorobotix will present the ARA spot sprayer with a live demonstration. Journalists will have the opportunity to see the ARA sprayer in action, experiencing firsthand its innovative AI-driven technology and its benefits for sustainable agriculture.

The ARA precision sprayer, a Swiss-made machine now sold in over 15 EU countries, Canada, South America, and recently in the US and Mexico, is at the forefront of precision agriculture. It utilizes advanced algorithms for the precise application of herbicides, fungicides, insecticides, and other phytosanitary products. This precision reduces chemical use, minimizes environmental impact, and enhances crop health and yield.

Key benefits of the ARA ultra-high precision sprayer:

1. Higher effectiveness in weeding with reduced herbicide resistance.
2. Reduced interventions and lower CO2 footprint.
3. Minimized chemical usage, preserving the environment.
4. Healthier crops with maximized yields.

https://ecorobotix.com/en/ara/

Rice cultivation of Léandre und Maxime Guillod, Lugnorre

The two brothers Léandre and Maxime Guillod are the third generation of a family of market gardeners in Môtier/Vully. Two years ago, they took over their parents' farm and founded the company Guillod SA. In addition to vegetable production as their main product, they have been growing wet rice for five years on a field near Lake Murten on a total of 11 hectares. One of the reasons they came up with this idea was because they are working with precision levelling technology that is unique in Switzerland as part of another branch of their business (scraper.ch). This is needed for levelling a flooded rice field. Wet rice is a classic niche product in Switzerland, but more and more farmers have become interested in growing it in recent years. The Guillod brothers are regarded throughout Switzerland as pioneers of wet rice cultivation. Léandre is president of IG Nassreis (www.nassreis.ch), which is committed to promoting the cultivation of wet rice in Switzerland.

The cultivation of wet rice

A future wet rice field is levelled with heavy machinery between summer and late autumn. Stable, water-impermeable dams between 25 and 30 cm high are needed against

neighbouring fields. In May of the following year, the Guillods flood the field with water from the Broye Canal. They have to pay a fee to the canton for drawing the water. The home-grown seedlings of five different rice varieties are planted 25 cm apart in rows with a 15 cm gap between the plants. Compared to sowing, this has the advantage that weeds can be kept better in check. The wet rice is grown repeatedly on the same area, and flooding prevents soil diseases from developing, as there is no oxygen for them to develop. Although the farm does not have an organic label, the Guillods do not use pesticides. Diseases have not yet occurred. When fertilising, they manage with two doses of urea, which adds up to around 70 kg N per hectare. The water level should be around 10 cm at all times until after flowering in August and must therefore always be monitored. After that, the water level drops steadily and the rice matures. Harvesting begins at a moisture content of between 20 and 25 per cent. It is harvested in September or October using the farm's own small caterpillar combine harvester. Around 5 tonnes of paddy rice are harvested per hectare. This is then dehusked, polished, packaged and the entire quantity marketed as «Riz du Vully».

Promoting biodiversity

Wet rice is an alternative on arable land with waterlogging that is difficult to drain. They also prove to be a hotspot for biodiversity. Rice fields with standing water between March and the end of August can be valuable as a habitat for moisture-loving species and strengthen the populations present in neighbouring wetlands. The Guillods' wet rice paddies are home to numerous amphibians such as the tree frog, which is endangered in Switzerland, and kibitzes, a type of bird, also breed there. In addition, wet rice fields can also function as valuable elements for connecting wetlands. State subsidies for biodiversity promotion areas (BFF) are paid for wet rice fields, which amounts to around CHF 1,000 per hectare. However, in order to receive these subsidies, strict conditions must be met, which can affect the profitability of rice cultivation.

Further informations

www.nassreis.ch
www.rizduvully.ch
www.instagram.com/riz_du_vully

Farm of the Guillods Brothers, Lugnorre

- Two locations for rice: 6 ha in Vully «Riz du Vully» and 3 ha in Kappelen near Aarberg «Aare Riis»
- Area under cultivation: 22 ha (including organic areas)
- Crops: wet rice, lamb's lettuce, rocket
- Employees: Two Guillod brothers, 2-3 seasonal workers, two part-time partners, parents
- Production method: Conventional, Suisse Garantie
- Marketing: Vegetables via wholesalers, rice direct marketing

Regional development projects (PRE)

Regional development projects (PRE) as an instrument of agricultural policy promote value creation in agriculture and regional cooperation. The PRE instrument was introduced as part of Swiss agricultural policy in 2007 with the aim of better harmonising agricultural policy with regional policy. The Agriculture Act allows support for regional development projects if agriculture is predominantly involved.

In the canton of Fribourg, the PRE BioGemüse Seeland (Passion Seeland bio:logique) is the first such project. It is made up of 4 sub-projects: New buildings Seeland Bio and Terraviva for the storage, preparation and packaging of vegetables, InnoPlattform Bio as an interface between producers, research and consulting, B2B marketing platform from 2025, Organic vegetables & tourism with tourist offers in connection with organic vegetables.

https://www.blw.admin.ch/pre
https://passion-seeland.bio