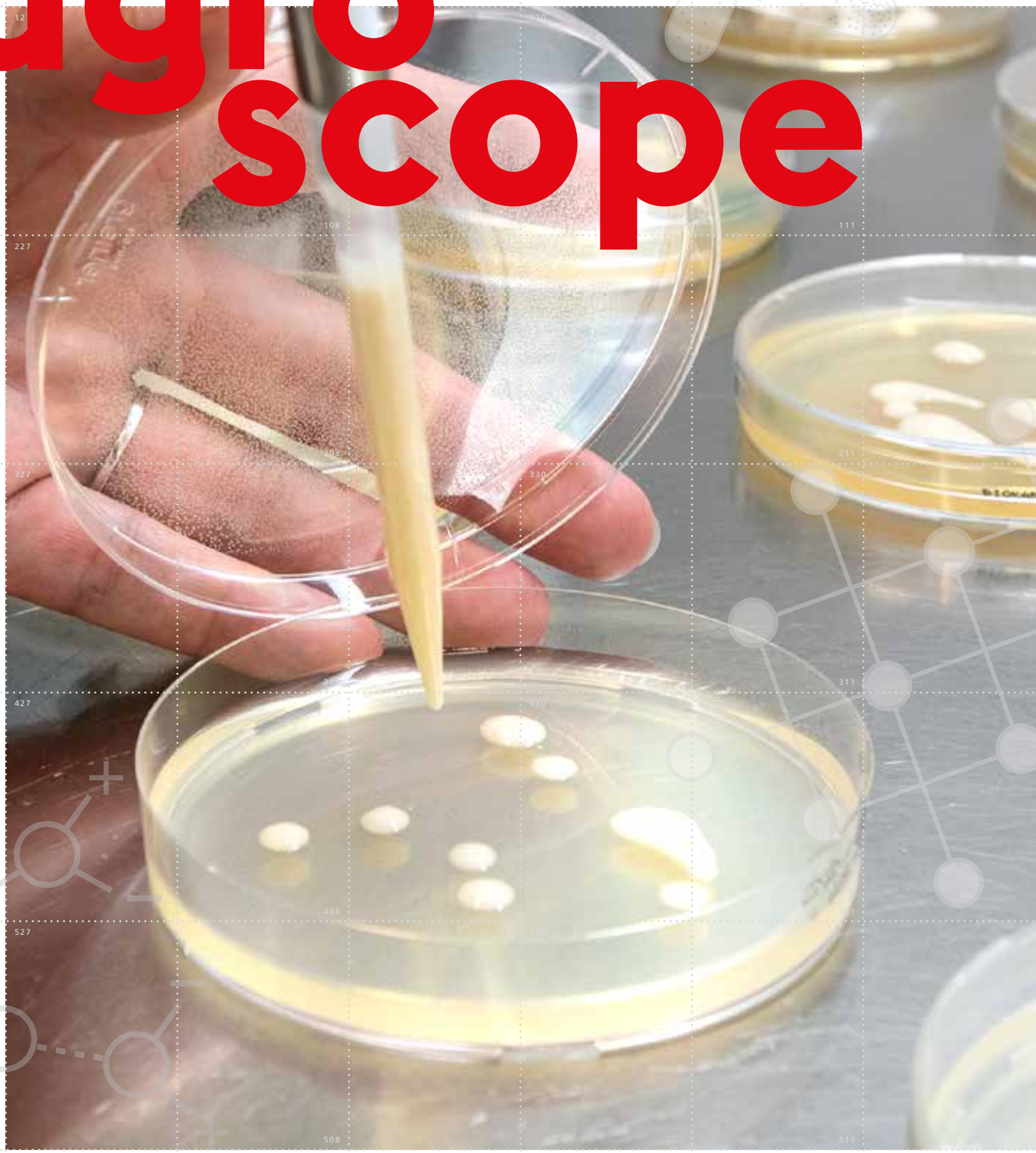
March 2021

agroscope



Agroscope good food, healthy environment

Schweizerische Eidgenossenschaft
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Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
Agroscope

Development and Production of Cheese Cultures

The Agroscope research centre in Liebefeld and its predecessors have been producing the famous Liebefeld cultures and supplying them to Swiss cheesemakers since the early 20th century.
In this way, they have made a significant contribution to the high quality and uniqueness of Swiss cheese and other fermented foods.

From Pitchfork to Fork: our Complex Food Production System

In the afternoon we snack on an apple without giving it much thought, and in the evening casually slice a carrot into the soup bubbling away on the cooker while the cutlet sizzles in the pan. When we run out of onions we can pick them up from the store in no time flat. We take it for granted that food in all its shapes and colours will always be available to us in unlimited amounts. We seldom think about how the apple grew, how the carrot got here, or what it takes to put the meat in our pan.

Consumers are a key element in the complex workings of a sustainable agriculture and food sector. Just how complex as well as how exciting this system and its interconnections are can be seen in the examples given in this issue, which highlight a selection of Agroscope's systems research:

Are high yields of good quality possible without the use of any plant-protection products whatever? The study on page 18 shows that at present, effective protection without the targeted use of plant-protection products in organic as well as conventional farming systems is very difficult. By contrast, flower strips in the field reduce pest pressure in the crops as well as promoting insect pollination performance and biodiversity (page 16). Cattle, for their part, are not only milk and meat suppliers, but also promoters of biodiversity (page 20). Moreover, a further study on page 22 shows that price is a determining factor in the consumption of organic and quality-label meat. And did you know that cheese can have a positive effect on our immune system (page 6)?

All of these research projects and studies contribute to the sustainable production of healthy foods. At the same time, we hope that our research work will provide food for thought on our own consumer behaviour, so that together we can reach our goal – good food and a healthy environment.

Eva Reinhard

Agroscope

Agroscope's new site strategy provides for the creation of new experimental stations in cooperation with cantons and the sector. The Nutrient Flows Experimental Station in the canton of Lucerne will be the first to launch.

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Traditional Foods as Alternatives to Synthetic Compounds

A strong immune system is important for health. Foods that are rich in propionic acid, such as Emmental cheese, have a supportive effect, and are a possible alternative to compounds with synthetically produced propionic acid.

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Food Environment Plant production Animal production Agricultural Economics

Agroscope is the Swiss Centre of Excellence for Agricultural Research, and is affiliated with the Federal Office for Agriculture (FOAG). Agroscope makes an important contribution to a sustainable agriculture and food sector as well as to an intact environment, thereby contributing to an improved quality of life.

Can Price Boost the Consumption of Quality Label and Organic Meat?

Price reductions in organic products attract more consumers, and the price of conventional products also affects the purchase of quality-label meat. High-welfare pork has the greatest potential for increased sales.

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Not All Cows Are Alike: Cattle Breed Affects Pasture Vegetation and Diversity

The pastures of low-productive Highland Cattle are particularly species-rich because of this breed's relatively low weight, undemandingness and slowness. This is borne out by Agroscope and AgroVet Strickhof studies.

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Sown Wildflower Strips and Hedgerows – Good for Pest Control, Pollination and Yields?

Sown wildflower strips improve pest control, and diverse, perennial strips also improve pollination services. Hedgerows in Switzerland yielded good results, while internationally effects were inconsistent. The effects on yield were variable.

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High-Risk Plant Protection Products – Is Effective Crop Protection Possible Without Them?

Agroscope examined whether it is possible to forgo the use of PPPs with a high risk potential for the environment. The results show that this would make effective crop protection more difficult, especially for field and vegetable crops, but also in organic farming.

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Other Themes

Events

29 / 4 / 2021, Agroscope Avenches
16th Annual Meeting of the Swiss Equine Research Network – online

29 / 5 / 2021, Agroscope Wädenswil
Agroscope Breitenhof Day 2021

11–12 / 6 / 2021, Agroscope Avenches
Equiday 2021

21 / 8 / 2021, BBZ Arenenberg and Agroscope
Güttingen Day 2021

5 / 10 / 2021, Agroscope Tänikon
44th Agroscope Agricultural Economics Conference

3–4 / 11 / 21,
Joint Conference of ALB-CH, AGRIDEA and swissmelio
Rural Construction Training Course 2021

All Agroscope events which are open to the public are advertised on our website.

More Research, More Practical Relevance: Nutrient Flows Experimental Station to Launch

Agroscope's new site strategy provides for the creation of new experimental stations in cooperation with cantons and the sector. The Nutrient Flows Experimental Station in the canton of Lucerne will be the first to launch.

Pursuing the common aim of sustainable solutions

The launch of the new Nutrient Flows Experimental Station marks a first important milestone in the implementation of Agroscope's new site strategy for more research and more practical relevance. The experimental stations serve as a hub between research and agricultural practice. The aim is to deal with application-oriented research questions in their respective geographic contexts, and to bring the findings onto the field and into stalls, pens and barns.

Effective measures for achieving environmental targets

The Swiss Confederation has fallen short of achieving its environmental targets regarding nutrient flows. Slurry and dung from animal production contain plant nutrients such as phosphorus and nitrogen. When they are spread on the field as fertiliser and the nutrients cannot be wholly absorbed by the growing plants, a surplus arises with negative environmental implications. Improving nutrient efficiency and reducing emissions are therefore priority challenges in agriculture. The need for optimisation is particularly great in regions with large livestock numbers, among others in the canton of Lucerne. Created in collaboration with various partners, viz., the canton of Lucerne, the Lucerne Farmers' Association and several sectoral associations, the Nutrient Flows Experimental Station is intended to specifically supplement Agroscope's current research activity on nutrient flows.

Research under practical conditions: Farms lend a hand

"In order for us to achieve the environmental targets, it is crucial that we include all the involved stakeholders. Together we hope to identify the concrete problems and find solutions that are also applicable in practice", says Corinne Boss, who represents Agroscope in the experimental station as Head of the 'Animals and Products of Animal Origin' Competence Division.

In regions with high livestock numbers like the canton of Lucerne, the challenge of nutrient surpluses is particularly great. Together with its partners in Central Switzerland, Agroscope will pursue practice-oriented solutions for improving nutrient efficiency and reducing emissions.

Questions from the animal production sector on nutrient efficiency and emissions reduction are important research priorities for Agroscope. Solutions such as adapted housing concepts with optimised dung removal and exercise areas with rapid urine drainage have resulted from previous research activities, e.g. from the experimental emissions housing in Tänikon. The point of the new experimental station is to validate and further develop these research findings and measures under practical conditions in the field and in the animal housing. To this end, the involved partners are creating a network of various farms in Lucerne that are making themselves available for the applied research.

Solutions for Switzerland as a whole

"In order to disseminate findings in practice, we will also closely involve Agridea and further partners from extension and education in the projects, in addition to the sectoral organisations. It should be possible to implement the measures on farms throughout the whole of Switzerland" explains Corinne Boss. The aim is to make a decisive joint contribution to achieving the agricultural environmental targets.

Partners

The creation of the Nutrient Flows Experimental Station is the result of the successful collaboration between researchers, the sector, and practitioners. The following partners are involved:

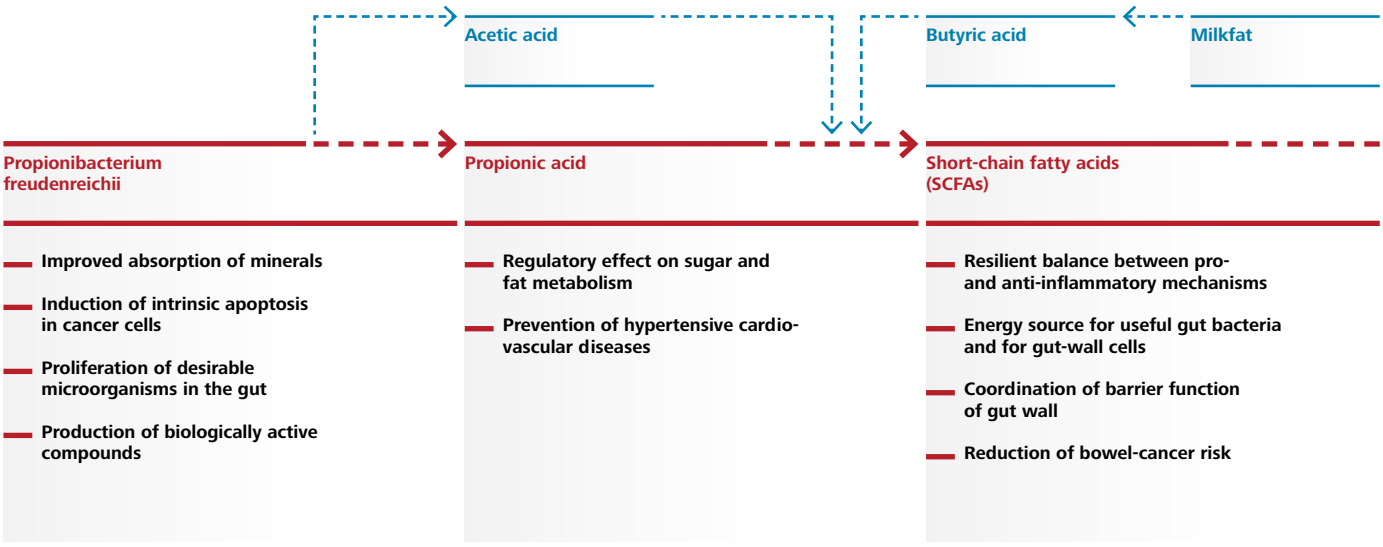
- Agroscope
- Canton of Lucerne
- Lucerne Farmers' Association (LBV)
- Milk Producers' Cooperative Society of Central Switzerland (ZMP)
- Suisseporcs (Association of Swiss Pig Breeders and Producers)
- Agridea, the competence centre for knowledge and experience exchange

Video: Working together for a sustainable agricultural sector – Nutrient Flows Experimental Station

Traditional Foods as Alternatives to Synthetic Compounds

A strong immune system is important for health. Foods that are rich in propionic acid, such as Emmental cheese, have a supportive effect, and are a possible alternative to compounds with synthetically produced propionic acid.

Hans-Peter Bachmann, Marie-Therese Fröhlich and Walter Bisig



Potential effects of propionic acid and *Propionibacterium freudenreichii* on human health.

Background information

One of the most important human organs, the gut plays a major role in the functioning of the immune system, which is affected by the composition of its microbial community. A diet rich in fibre and the consumption of foods with short-chain fatty acids can help strengthen the immune system.

New findings from medical research

Human beings live in balance with approx. 100 trillion microorganisms, the so-called microbiota. Scientific studies suggest that increasing levels of short-chain fatty acids such as acetic, propionic or butyric acid is a highly promising prophylactic dietary approach to making this balance (immune homeostasis) more resilient.

Thanks to their propionic acid and propionic-acid bacteria content, Swiss-type cheeses such as Emmentaler Switzerland AOP have various positive effects on human health.

Among other things, these short-chain fatty acids can reduce the risk of over-reaction or erroneous response of the immune system: if too few are present in the gut, the number of regulatory T-lymphocytes may also be too low. In normal circumstances, and in a healthy body, these cells prevent the occurrence of autoimmune diseases, i.e. diseases in which the immune system responds too strongly or wrongly, and attacks the body itself. These diseases cause inflammatory responses in the body, which damage tissue. An adequate supply of short-chain fatty acids acts as an 'inflammation brake' and helps the body stay healthy / prevents it from harming itself.

Prevention through a balanced diet

Short-chain fatty acids are a natural by-product of dietary-fibre fermentation in the large intestine. The modern Western diet, however, often consists of low-fibre foods. This can lead to insufficient production of short-chain fatty acids. This is turn causes changes in both the microbiota and the gut cells, and the immune system is thrown out of balance. That's why short-chain fatty acids are also increasingly administered therapeutically by the oral route as synthetic compounds. Fermented foods, which naturally contain short-chain fatty acids, represent an alternative to this approach. Full-fat large-holed cheeses such as Emmentaler Switzerland AOP are the only foods that naturally contain significant amounts of all three of the relevant short-chain fatty acids – acetic, propionic and butyric acid.

Conclusions

- Short-chain fatty acids, in particular propionic acid, have many positive effects on our immune system and on the regulation of sugar and fat metabolism.
- Short-chain fatty acids occur naturally when dietary fibre ferments in the large intestine.
- In a Western low-fibre diet, the consumption of natural propionic acid-fermented foods such as Emmentaler Switzerland AOP can contribute significantly to covering our daily propionic acid requirement.
- Propionic acid bacteria are capable of producing numerous biologically active compounds, such as e. g. the B-group vitamins (especially B12, folic acid and B2).
- Emmentaler Switzerland AOP is a raw-milk cheese. A diet containing raw-milk products favours a varied gut microbiome and offers protection from allergies, and hence promotes good health.

Scientific article at agrarforschungschweiz.ch

Agricultural Income Rose in 2019

The latest figures from Agroscope show that average agricultural income in 2019 rose by 5 per cent compared to the previous year, to CHF 74,200 per farm.

→ Press release

The Thousand and One Faces of the Grape Variety Chasselas

An essential part of Swiss viticulture, the Chasselas grape variety is characterised by a great clonal diversity which has been safeguarded for decades by Agroscope. Factsheets have now been compiled for the 17 main biotypes of this grape variety.

→ Publication

Controlling *Drosophila suzukii* in Berry Crops

A new guide from Agroscope produced by the *Drosophila suzukii* Task Force summarises the strategies for controlling the spotted wing drosophila in various berry crops.

→ Publication

Almond Trees in Switzerland: Pipe Dream or Opportunity?

Can growing almond trees be a new way forward for Swiss fruit growing? What is the potential here in terms of production and marketing? Answers to these questions are being provided by Agroscope researchers in partnership with representatives from practice and administration.

→ Publication

Tracking the Success Factors of Communal Alpine Pastures

1600 alpine farms in Switzerland are organised as communal alpine pastures. Agroscope has identified the key success factors for this form of cooperative management.

→ Press release

For Healthier, More Efficient and Resistant Livestock

The aim of Agroscope's new 'Animal GenoPhenomics' Research Group is to strengthen livestock research and interdisciplinary networking and to tap into new findings and synergy opportunities, especially in the fields of animal breeding and animal health.

→ Publication

Agricultural Income Monitoring

This video on agricultural income monitoring explains what the data survey is for, how it is carried out, and why farmers should take part in it.

→ Video

Presentation of the Swiss National Stud at the Digital Horse Week

The first Digital Horse Week took place from 5–13 December 2020, with over 200 exhibitors from France and some neighbouring countries.

→ Video

Less Sugar in Yoghurt

How noticeable is a reduction of sugar in yoghurt? An Agroscope study shows the extent to which the sugar content can be reduced without consumers noticing.

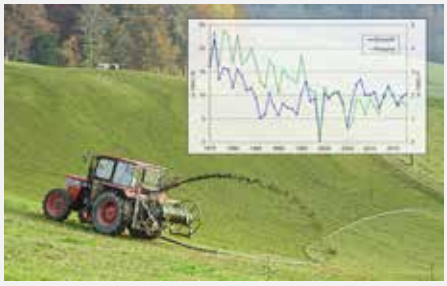
→ Publication

Controlling Yellow Nutsedge with Free-Range Pigs

Using pigs to control yellow nutsedge is environmentally friendly, effective, protects the soil, and creates added value: the flesh of the animals can be sold as meat.

→ Publication

Nitrogen and Phosphorus Surpluses



The use of fertilisers and feed in the Swiss agricultural sector increased dramatically in the second half of the twentieth century. The positive effect of this was a sharp increase in agricultural production. The negative consequences, however, can be seen mainly in the form of nitrogen (N) and phosphorus (P) surpluses, and the associated pollution of soil, air and water.

→ Publication

Lutz Merbold: Hoping to Make a More Positive Impact on the Climate Debate in Agriculture

Lutz Merbold has headed the 'Agroecology and Environment' Strategic Research Division since 1 October 2020. He brings to Agroscope the knowledge of sustainable agroecosystems which he acquired in Africa

Until recently, Lutz Merbold worked and lived in East Africa. As the Head of the Mazingira Centre ('Mazingira' means 'environment' in Swahili) at the International Livestock Research Institute in Nairobi, Kenya, he and his team collected environmental data. These were used to highlight solutions for a more sustainable agricultural sector: "I have always been drawn to where research could make an impact."

Lutz Merbold was born in Plauen (Saxony, Germany) on 8 April 1980. To begin with, he had little connection to agriculture. He graduated in Ecology and Environmental Law at the Friedrich Schiller University in Jena as well as in Tropical Botany at the University of Leipzig. He earned his doctorate in the EU project 'CarboAfrica' at the Max Planck Institute for Biogeochemistry in Jena and at the ETH Zurich – which is how he wound up in Africa.

Now he lives in Bern, and is Head of the 'Agroecology and Environment' Strategic Research Division at Agroscope. "When I saw the advert for my current job, I recognised the chance to further investigate the interactions between soil, biodiversity and climate" states Merbold. In addition to professional reasons there were also private ones. "A private life across continents is difficult. A 'frequent flyer' climate researcher is not exactly credible" confesses Merbold, whose life partner lives in southern Germany.

"I want to make a more positive impact on the climate debate in agriculture, and emphasise more clearly the importance of agriculture for sustainable food production and nutrition. For that, we should research in an even-more system-integrated manner, in order to adapt agriculture to climate change." Agriculture which is suited to local conditions is a step in this direction. To make progress here, he has brought back a valuable skill from Africa: the ability to listen. "It sounds like a cliché, yet it is absolutely key for understanding all the stakeholders and developing solutions jointly." —

1 Variety testing of different grain varieties
2 Plant protection: Wireworm control | 3 Experimental release of samurai wasps in fruit production


Kurtzmann
Diesel
ZH-9833

1 Alpine dairy farming in focus | 2 Mycorrhiza under the microscope
3 Research for potato cultivation | 4 Soil compaction
5 Fruit blossom | 6 Production of cheese cultures in Liebefeld
7 Close-up of a Chasselas grape

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Sown Wildflower Strips and Hedgerows – Good for Pest Control, Pollination and Yields?

Sown wildflower strips improve pest control, and diverse, perennial strips also improve pollination services. Hedgerows in Switzerland yielded good results, while internationally effects were inconsistent. The effects on yield were variable.

Matthias Albrecht et al.

Society is calling ever more strongly for agricultural products to have as small an environmental footprint as possible. This balancing act between good yields and an intact environment is also more successful if we harness the ecosystem services that nature offers: beneficial organisms for more effective pollination and for effective pest control. It is precisely these beneficials that sown wildflower strips and hedgerows can help to encourage. Agroscope specialists used data from 35 studies in agroecosystems in North America, Europe and New Zealand to quantitatively evaluate the effectiveness of sown wildflower strips and hedgerows for pollination and pest

Conclusions

- At least three factors appear to influence the effectiveness of plantings in terms of pollination and pest control: the diversity of the flowering plants sown, the age of the sown wildflower strips, and the interconnectedness of hedgerows and sown wildflower strips in the landscape.
- Greater plant-species diversity not only has a positive effect on the diversity of beneficial organisms, but also provides for better pollination services in the neighbouring crops, making it a win-win situation for the environment and agriculture.
- Wildflower strips are particularly effective from about three years after sowing onwards.
- From a landscape perspective, the interconnectedness of such plantations with other landscape elements and further sown wildflower strips is also advantageous.
- Further research is needed to discover how positive effects on yields can be achieved more consistently and effectively. For this, it is important to identify the key factors that maximise the effectiveness of sown wildflower strips.

Diverse perennial flower strips improve pest control and pollination.

control. They also looked for key factors leading to the failure or success of such measures. Their aim: to develop recommendations for creating optimised sown wildflower strips and hedges. Specifically, this involved determining

- the extent to which sown wildflower strips and hedgerows improve pollination and pest control;
- the role played by the biodiversity of the flowering plants and the age of the wildflower strips;
- whether a structurally diverse, varied landscape exerts an influence; and
- whether sown wildflower strips improve harvests.

Sown wildflower strips improve pest control by 16%

The results of the literature study were clear: sown wildflower strips improve pest control on adjacent fields by an average of 16%. Whilst the Swiss hedgerows also had a positive impact on beneficials and pollination, no clear influence on pest control could be measured in the international context. The reason for this could be that with sown wildflower strips, farmers are better able to include those plant species that are particularly effective at promoting the desired beneficial organisms.

Older, more diverse and more interconnected mean better!

In the investigated studies, the Agroscope specialists discovered that more-diverse perennial sown wildflower strips are more effective at encouraging pollinating insects and their services. Flowering areas of this sort seem to offer a better food supply and better overwintering and nesting options, allowing local populations of beneficials to become established over time. The positive effects on pollination in the crops were greatest near the sown wildflower strips and hedgerows, and decreased with increasing distance. Bigger therefore does not necessarily mean better – to the contrary: the more interconnected small plantations are with one another, the greater their positive influence on pollination.

The Agroscope specialists found no consistent effects of sown wildflower strips on yields. This is presumably because the effects were highly variable, and other factors exert an even stronger influence on yield. Further research work is needed here.

Scientific article in Ecology Letters (2020)
The effectiveness of flower strips and hedgerows on pest control pollination services and crop yield: a quantitative synthesis

High-Risk Plant Protection Products – Is Effective Crop Protection Possible Without Them?

Agroscope examined whether it is possible to forgo the use of PPPs with a high risk potential for the environment. The results show that this would make effective crop protection more difficult, especially for field and vegetable crops, but also in organic farming.

Muris Korkaric, Irene Hanke, Daniela Grossar, Reto Neuweiler, Bastien Christ, Judith Wirth, Markus Hochstrasser, Pierre-Henri Dubuis, Thomas Kuster, Stève Breitenmoser, Barbara Egger, Sarah Perren, Stéphanie Schürch, Annette Aldrich, Lukas Jeker, Thomas Poiger and Otto Daniel

Forgoing the use of high-environmental-risk plant-protection products makes effective crop protection difficult.

Various agricultural policy measures (PPP Action Plan, Parliamentary Initiative) aim to reduce the use of plant-protection products (PPPs) as well as the risks associated with them. The AP22+ is also meant to apply greater restrictions on the use of certain PPP active substances in the Proof of Ecological Performance (PEP) in future. The aim is to reduce groundwater pollution and the risks for surface waters and bees, whilst continuing to protect crops. In the present study, Agroscope has analysed the options and consequences of restricting the use of active substances with a high risk potential.

Risk posed by PPPs for surface waters and bees

The risk potentials of the active substances authorised at the beginning of the study (March 2019) were determined with risk scores (risk assessments using a simplified, standardised method) for groundwater, surface waters and bees. Risk-mitigation measures such as use restrictions were not included in the assessment.

Using the risk scores, active substances were ranked according to their risk potential:

- The 15 active substances with the highest potential for groundwater contamination by metabolites consisted of ten herbicides (weed control) and five fungicides (control of fungal diseases).
- Insecticides (control of harmful insects) and acaricides (mite control) had the highest risk scores for surface waters.
- For bees, it was also mainly insecticides and acaricides that were identified as potentially high-risk.

Protecting crops with fewer risks for the environment

Agroscope examined the extent to which active substances with a higher risk score could be replaced by active substances with a lower risk score. For this purpose, an agronomic evaluation of approved active substances with full or partial efficacy was carried out, taking account of existing or anticipated resistance problems. For twelve insecticides/acaricides, eleven herbicides, five fungicides and one phytoregulator (i. e. plant-growth regulator), the researchers analysed how crop protection might be affected if PPP use were subject to restrictions.

PPP use in arable and vegetable crops difficult to replace

Restricting the use of insecticides with the highest risk potentials would make effective plant protection impossible for certain arable and vegetable crops. Particularly in vegetable crops, restricting the use of the herbicides and fungicides examined would also have negative effects.

By contrast, in fruit and berry production and viticulture, there are in most cases several effective alternatives available to the examined insecticides.

Conclusions

- Agroscope's study provides a decision-making basis for determining restrictions of the available active substances in PEP.
- The active substances with the highest risk potentials were identified based on a standardised risk score.
- A broad restriction of the high-risk-potential active substances would have far-reaching consequences, particularly for the protection of arable and vegetable crops.
- Restricting the use of Spinosad could in some cases lead to major problems in organic crop production.
- Active further development of plant-protection strategies that make do with reduced PPP use is essential in order to mitigate the consequences of restrictions on active substances.

Spinosad important in organic farming

When forgoing the use of Spinosad, an insecticide also approved for organic farming, greater difficulties in integrated and organic production in all examined application domains must be expected. —

Agroscope Science publication no. 106, 2020
Database and Criteria for Limiting PPP Choice in PEP

Not All Cows Are Alike: Cattle Breed Affects Pasture Vegetation and Diversity

The pastures of low-productive Highland Cattle are particularly species-rich because of this breed's relatively low weight, undemandingness and slowness. This is borne out by Agroscope and AgroVet Strickhof studies.

Caren M. Pauler and Manuel K. Schneider

Hardy cattle such as the Highland cow are particularly well suited to the management of marginal-yield sites.

Low-input pastures are among the most biodiverse habitats in Europe. Formed over millennia by the interaction of grazing livestock and vegetation, today these pastures are threatened by both intensification and abandonment. In addition, livestock breeding has dramatically increased the productivity of many cattle breeds. Agroscope and AgroVet Strickhof studies demonstrate that breeding has also altered the foraging and movement behaviour of cattle, a fact that has far-reaching consequences for pasture vegetation.

Low-productive breeds: light, undemanding, slow

Low-productive cattle weigh less than high-productive breeds. Since they also have relatively large claws, the pressure exerted by their weight is spread over a comparatively large area, which protects the sward. In addition, they cover less distance on the pasture, which further reduces trampling impact. Consequently, plant species indicative of trampling are far more common on the pastures of high-productive, heavy breeds. These trampling-adapted plants outcompete more-susceptible species, thereby decreasing biodiversity.

The more productive a breed is, the more selectively the animals graze. High-productive cattle prefer nutrient-rich, easily digestible forage plants, whilst low-productive cattle also consume mat grass, thistles, and other 'unappealing' plants. In this way, they reduce the dominance of problem plants, which in turn promotes pasture biodiversity and forage quality. Moreover, low-productive Highland Cattle graze the pasture more evenly by visiting steep slopes and areas of low forage quality more frequently than high-productive breeds. Consequently, there are fewer over- and underused areas in their pastures.

Exploiting the potential of low-productive breeds

Low-productive cattle can make efficient use of low-input grassland in marginal-yield locations, thereby promoting biodiversity. On many farms, the livestock population can be supplemented by an extensively reared 'service herd' with minimal effort and expense.

The positive traits of low-productive cattle appear to be closely associated with their low output. Breeders should therefore bear in mind that these desirable traits could be lost if breeding were geared towards higher output. —

Conclusions

- Today, the biodiversity of low-input pastures which arose over millennia through extensive grazing is under threat.
- The study demonstrates that cattle breeds differ in terms of their impact on vegetation.
- Low-productive cattle breeds with large claws preserve the sward. They graze unselectively and thus help to keep problem plants and shrubs at bay.
- Low-productive cattle breeds use the pastures more evenly, thereby promoting the biodiversity of low-input grassland. They can be a worthwhile addition to livestock, e. g. for using ecologically valuable land.
- The desirable traits of low-productive cattle breeds may be lost when breeding is geared towards higher output.

Scientific article at agrarforschungschweiz.ch

Can Price Boost the Consumption of Quality Label and Organic Meat?

Price reductions in organic products attract more consumers, and the price of conventional products also affects the purchase of quality-label meat. High-welfare pork has the greatest potential for increased sales.

Franziska Zimmert and Christian Gazzarin

Consumers react to price changes in quality-label and organic meat products.

Depending on production method (conventional, quality label, organic) and product category (beef, pork, poultry), consumers react differently to lower prices.

On the one hand, Swiss consumers have a keen interest in species-appropriate animal husbandry. On the other hand, sales of meat products with an animal-welfare seal (quality-label or organic meat) have been stagnating for several years now. Is the price of quality-label or organic products too high for many customers? Using actual consumer data, an Agroscope study commissioned by the Swiss Animal Protection Association has calculated how consumers react to price changes.

Falling organic prices favour organic beef and pork

Depending on production method (conventional, quality label, organic) and product category (beef, pork, poultry), consumers react differently to lower prices. Organic products have the highest sales potential. If the sales price falls by 10%, beef sales rise by up to 27%, pork sales by an even higher 32%. Poultry sales remain largely the same, however.

Conclusions

- Price reductions in organic products attract consumers; in the case of quality-label meat, higher prices of conventional products are also important.
- This finding is most obvious for pork, where up to a 30% increase in sales can occur, both for organic pork in the case of a 10% price reduction, and for quality-label pork owing to a rise in the price of the conventional products.

Quality-label pork benefits from price hikes in conventional products

Only limited numbers of consumers make the switch from conventional to organic beef and poultry products. With pork, however, this behaviour is more common: When the price of conventional products goes up by 10% compared to quality-label products, it can lead to an increase of up to 34% in the purchase of the latter.

A possible explanation of this phenomenon is that price differences between conventional products and quality-label meat are more pronounced for beef than for pork. Consequently, quality-label beef remains too expensive for many consumers. It is also conceivable that the range of items on offer varies a great deal from one outlet to another, and that consumers do not always have access to all of the quality-label products. —

Presentation at agroscope.ch

Wild Bees Fly for Research

What stresses wild bees? Is it certain plant-protection products, the absence of nutrient-rich foods – or a combination of both factors? Research partners throughout Europe investigate these issues – Matthias Albrecht from Agroscope is one of them.

Matthias Albrecht, you carry out semi-field experiments with red mason bees in flight cages. What is your aim?

In order that we may effectively protect and promote bees and their crucial pollination services, it is important to understand what stress factors they are exposed to such as food stress, plant-protection products and introduced diseases. But we still know very little about how these factors interact, how they might affect the bees, and whether certain factors could potentially become exacerbated.

What does that mean for your bees in concrete terms in the cages?

In this experiment, the wild bees nesting here find different plant species that differ in the quantity and quality of the offered floral resources, for example in the protein content of the pollen. And we also have mixtures of different plant species, or individual plant species in monocultures.

What initial findings already exist?

Initial results from the PoshBee project indicate, for example, that certain individual plant-protection products may be mutually reinforcing each other in their negative effects on wild bees. And this is important knowledge which can help to further develop risk assessment for bees and avoid the use of such particularly risky combinations of individual plant-protection products – in order to protect the bees.

Masthead

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‘In order to disseminate findings in practice, we will also closely involve Agridea and further partners from extension and education in the projects, in addition to the sectoral organisations. It should be possible to implement the measures on farms throughout the whole of Switzerland’

Corinne Boss, Head of the 'Animals and Products of Animal Origin' Competence Division at Agroscope

▸ Agroscope’s new site strategy, page 4