IBLA
ANNUAL REPORT 2017

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IBLA LUXEMBURG A.S.B.L.

IBLA

Institut fir biologësch
Landwirtschaft an Agrarkultur
Luxemburg a.s.b.l.

The *"Institut fir biologësch Landwirtschaft an Agrarkultur Luxemburg a.s.b.l. (IBLA)"* was established in 2007 by the two associations for oganic agriculture bio-LABEL Lëtzeburg and Demeter Lëtzeburg (merger in 2012 *"Bio-Lëtzeburg – Vereenegung fir Bio-Landwirtschaft Lëtzeburg a.s.b.l."*), the Research Centre of Organic Agriculture (FiBL)/Switzerland, organic farmers and processors as well as private persons.

The *"Bio-Berodung"* agricultural extension service for organic farmers , which was established in 1999 by Demeter Lëtzeburg and Bio-LABEL , has been integrated in the IBLA at that moment.

IBLA is the competence centre for research and consulting in the field of organic agriculture and viticulture in Luxembourg. According to the motto 'research for the practice', IBLA aims to have rapid transfer of their research results and knowledge into the practice through extension services, seminars, field visits of trials and various information brochures and leaflets.

The focus areas are inter alia protection of natural resources (water, soil, climate) and biodiversity, sustainability assessment, preservation and improvement of soil fertility, variety testing, animal welfare and optimization of crop rotation.

IBLA is also an important contact point in Luxembourg for the cultivation and utilization of legumes.

MISSION STATEMENT

In a workshop held with experts from Tiime, members of the IBLA board of directors and IBLA employees have elaborated the vision and mission of IBLA over the course of 2017. The vision and mission were presented to the public at IBLA's ten-year anniversary celebration in December 2017.

Vision
We envision a world where we can produce high quality food while simultaneously protecting the natural environment through farming in respect of nature.

We believe that such a sustainable farming system can be achieved through organic agriculture.

Mission
Improving and supporting organic agriculture through research, consulting and dissemination, thus making agriculture more performant and resilient.

This will empower farmers to implement sustainable farming practices in Luxembourg.

SCIENTIFIC ADVISORY COUNCIL

To guarantee the scientific quality of the Research and Development (R&D) Department, a scientific advisory council was founded in 2015.

Besides providing advice to management, the latter serves the function of assisting the R&D Department with any research-related questions they might have in order to guarantee the scientific quality of their work.

- Certified agricultural engineer Jean Stoll, independent consultant – chairman
- Professor Dr Jürgen Heß, area of expertise: organic agriculture and crop farming, University of Kassel – vice chairman
- Professor Dr Christophe Emmerling, subject: agrology, University of Trier
- Dr Thorsten Haase, organic farming consulting service, State Office (Landesbetrieb) for Agriculture Hessen
- Professor Dr Ulf Liebe, Institute of Sociology, University of Bern
- Professor Dr Urs Niggli, Director of the Research Institute of Organic Agriculture (Forschungsinstitut für biologischen Landbau - FiBL) in Switzerland
- Professor Dr Hans-Peter Piepho, area of expertise: biostatistics, University of Hohenheim
- Dr. Christian Schader, head of sustainability analysis at FiBL Switzerland
- Prof. Dr. Werner Zollitsch, head of the Division of Livestock Sciences, University of Natural Resources and Life Sciences, Vienna

AGRÉMENT

In the past, the status of 'research institute' was reserved for well-known national organisations such as LIST or the University of Luxembourg. This changed when a new law proposed by the Ministry for Research also allowed for smaller associations and enterprises to be officially recognised as research institutes, so long as the standard of scientific study was ingrained within their guidelines.

This change in legislation authorises the institutions in question to acquire EU funding for research projects. Since being awarded the *„Agrément"* in 2015, IBLA has been able to assume the role of autonomous project partner in European research projects.

CONTRAT DE PERFORMANCE

In 2015, IBLA was first offered a performance contract *(„Contrat de performance")* by the Ministry for Research. Said contract has been renewed on an annual basis ever since. It serves as a kind of core funding in order to guarantee the future development and quality improvement of IBLA's R&D Department. The *„Contrat de performance"* comes attached with a number of performance-oriented conditions that IBLA has to fulfil.

TEAM

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Jean-Louis Colling-von Roesgen
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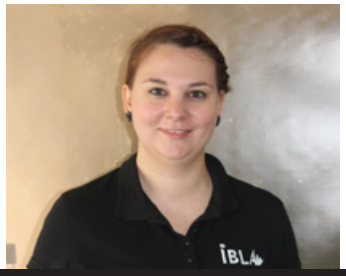
Francis Jacobs, Marco Koeune, Jean-Paul Krier-Bisenius, Roland Majerus, Aender Schanck, Jos Schanck
Board members



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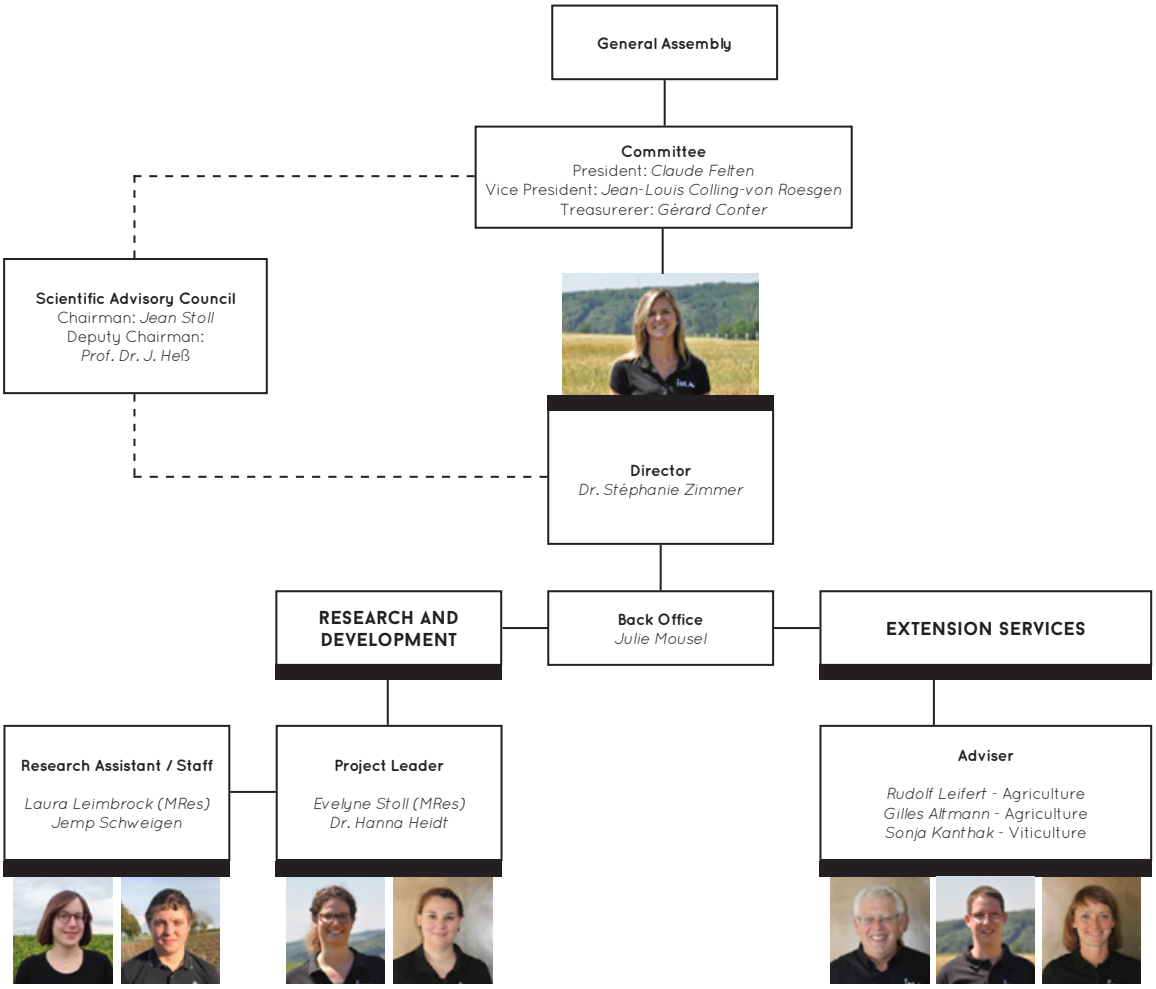
ORGANIZATION CHART 2017

In 2017 the IBLA Team has grown by two additional team members. Gilles Altmann started in June 2017 in the Research and Development Department and in the Extension service. Laura Leimbrock supports the Research and Development Group since December 2017.



NEW TEAM MEMBERS

Presentation of Laura Leimbrock (MSc. Env. Sciences), IBLA Research & Development

Her interest in the environment, sustainability, science, education as well as field-related communication first led Laura to study Environmental Sciences at the University of Trier. Leveraging the knowledge gained from her Bachelor's degree, she then specialised in the field of environmental protection and associated management strategies in the context of an English-taught Master of Science (MSc) programme. As a scientific associate in the field of Spatial and Environmental Sciences, Laura subsequently gained experience in the areas of education and research with a focus on the environmental sector. At the same time, she was a project assistant at a four-year summer school in Vietnam as well as a mentor for international students. Since December 2017, she has been contributing to the IBLA team as a scientific associate in the field of crop cultivation. Among others, her tasks will involve drone-assisted research into mechanical weed regulation in soybean cultivation as part of the new LeguTec project.

Presentation of Gilles Altmann (MSc. Agricultural Crop Sciences), IBLA Extension Service Agriculture

After graduating from the Natural Sciences division of the *„Lycée de Garçons Luxembourg"* high school in 2012, Gilles, who had been enthusiastic about agriculture from a very young age, decided to expand his existing knowledge by enrolling in a Bachelor's programme in Agricultural Sciences at the University of Bonn. He was mainly interested in arable farming and thus chose *"Agricultural Crop Sciences"* as his focus area. Gilles's fascination for his chosen field of study did not abide. After completing his Bachelor thesis on bio-char, he enrolled in a Master's programme in Agricultural Crop Sciences at the Institute of Organic Agriculture (University of Bonn) and wrote a Master thesis on *„N2-Fixation of winter grain legumes grown in mixture with triticale in the case of temporary direct seeding"*. Given his interest in organic farming, Gilles is very grateful to be able to contribute directly to IBLA's work as an advisor so shortly after having completed his academic studies. Apart from his passion for everything related to agriculture, Gilles is an enthusiastic amateur gardener and he is a member of the volunteer fire brigade of Niederanven-Schuttrange. He also enjoys riding his mountain bike and plays the trombone in the Harmonie Municipale de Schuttrange.

„DON EN CONFIANCE“ MEMBERSHIP

On 12th December 2017, IBLA was solemnly accepted as a member of *„Don en Confiance“*. The non-profit organisation *„Don en Confiance Luxembourg“* was founded with the objective of safeguarding the rights of donors, namely to know how their donation will be applied and whether or not the latter will be managed appropriately. IBLA too has now pledged to uphold the six principles of the *“Code of Good Behaviour”* (*„Code de bonne conduite“*, www.donenconfiance.lu). IBLA has furthermore been recognised as a non-profit association since 2016. Donations to IBLA can therefore be fiscally deducted.

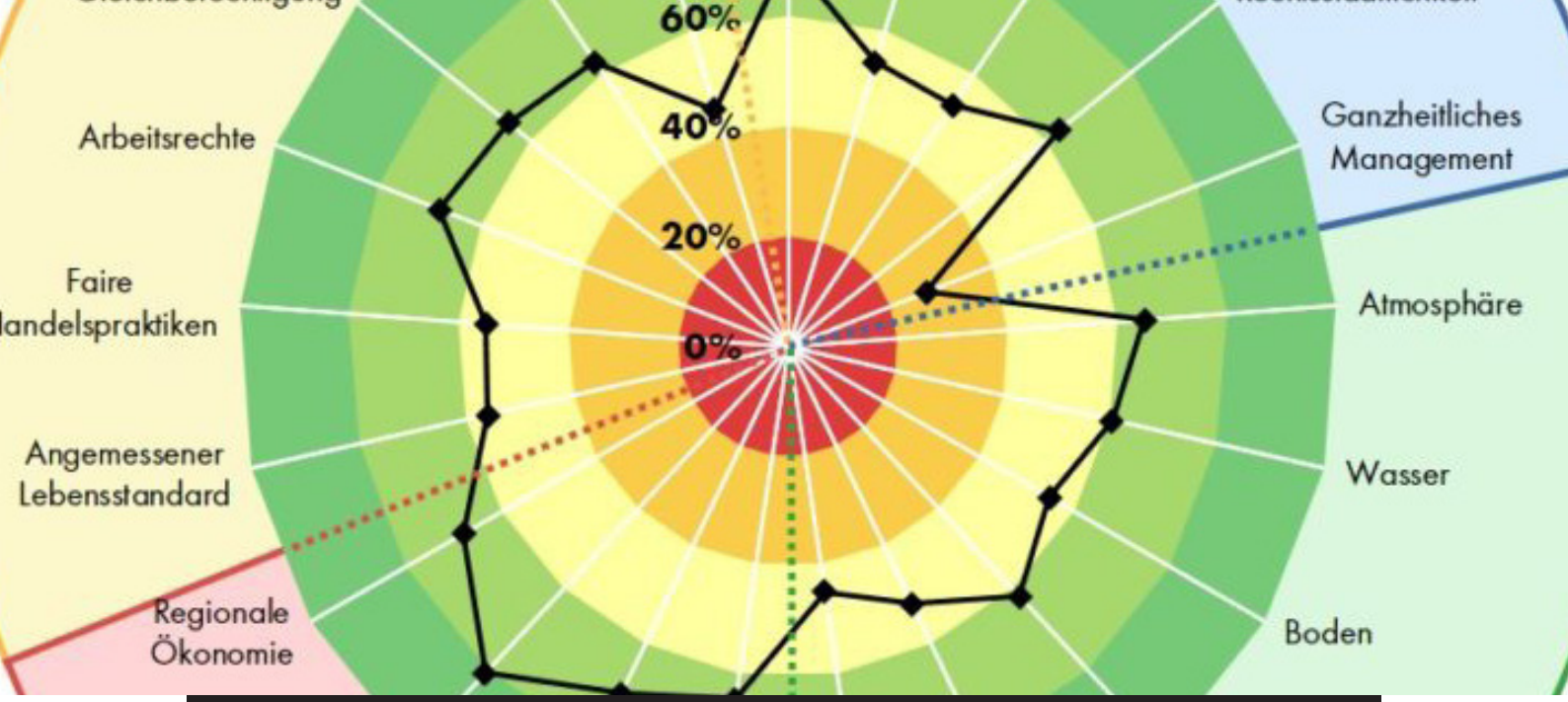
Besides corporate sponsoring and private donations, IBLA also received contributions in memory of deceased individuals in 2017.

RESEARCHING AGRICULTURE TOGETHER

In 2017, IBLA signed cooperation agreements (so-called Memoranda of Understanding) with both the Luxembourg Institute of Health (LIH) and the Luxembourg Institute of Science and Technology (LIST) with a view to continuing their collaboration in the field of organic agriculture research.

These five-year agreements provide, among other aspects, for the development and implementation of common projects, the co-authoring of publications as well as the exchange of employees.

IBLA has already signed such cooperation agreements with the Research Institute of Organic Agriculture (FiBL) and the *“Lycée Technique Agricole Ettelbrück (LTA)”* high school. These partnerships are part of their efforts to make an important contribution to the future development of sustainable agriculture in Luxembourg.



SUSTAINABILITY MONITORING OF AGRICULTURAL HOLDINGS BY MEANS OF SMART FARM TOOLS

smart
sustainability monitoring and assessment routine

In order to explore the subject of comprehensive sustainability assessment further, Dr Stéphanie Zimmer and Evelyne Stoll participated in the SMART (Sustainability Monitoring and Assessment RouTine) Farm Tool training workshop, which was organised by the SFS GmbH and FiBL Switzerland. Naturata funded their participation.

How sustainably are Luxembourgish farms managing their business? What are their strong suits and what areas present potential for improvement? Where do the farms stand compared to agricultural holdings in neighbouring countries?

To investigate these questions, FiBL developed its SMART (Sustainability Monitoring and Assessment RouTine) Farm Tool. SMART is used to analyse and assess the sustainability of farms and food companies. It is based on the SAFA guidelines (Sustainability Assessment of Food and Agriculture Systems) of the Food and Agriculture Organisation of the United Nations (FAO), which were published in December 2013. The guidelines divide the concept of sustainability into a total of 58 subject categories grouped into four divisions: economic resilience, ecological integrity, social welfare, and good governance. For each category, FAO has defined a specific sustainability objective that serves as a benchmark for companies and agricultural holdings. The SAFA guidelines aim to clarify and concretise the notion of sustainability, as well as to help actors in the food sector to implement specific improvements in terms of sustainability. They represent a single framework and allow for a comparable and transparent sustainability assessment of businesses and farms of different types and sizes. The SMART Farm Tool takes the SAFA guidelines and makes them efficiently and practically applicable in the context of commercial agriculture. The assessment of a farm is based on an inspection of the grounds and an interview on various agriculture-related subjects. The method takes into account a farm's entire range of operations including, for instance, the effects arising from agricultural input acquisition.

Thanks to the training at FiBL Switzerland, IBLA can now use the SMART Farm Tool to capture, analyse, compare and evaluate the specific sustainability performance of any agricultural holding in Luxembourg in a systematic and holistic way.

Project partner

FiBL

sfs Sustainable Food Systems

Funding

NATURATA Bio Marché
Fair a kooperativ mat de Bio-Baueren

ORGANIC AGRICULTURAL METHODS FOR THE PROTECTION OF DRINKING WATER

Our drinking water resources are impacted by diffuse inputs of nutrients and pesticides originating from agriculture. Especially the drinking water providers increasingly see themselves confronted with these problems and face the need to invest in expensive processing and filtering facilities in order to guarantee the quality of drinking water and to keep it free of harmful substances. To address this issue, the waterworks of the City of Luxembourg had already offered a performance contract to IBLA in 2016 with the objective of introducing the farmers to the methods of organic agriculture in drinking water catchment areas. By abandoning chemical synthetic pesticides and mineral nitrogen fertilisers, organic agriculture offers farming options that are in line with the protection of our drinking water. The methods of organic farming (multiannual crop rotations, mechanical weed control, etc.) can also be implemented at conventional farms without immediately having to transition them to fully organic farms. By implementing these methods, conventional farms contribute to the protection of drinking water as well.

In this context, a series of seminars on the subject of *„Healthy soil, healthy water"* was organised in 2017 in cooperation with the City of Luxembourg (VdL). It included an excursion in May on the topic of weed control and a seminar on the topic of soil in autumn to raise awareness of organic farming methods among the farmers operating in the drinking water catchment areas in Luxembourg City. As in the previous year, the VdL furthermore refunded the participation fees paid by conventional farmers who enrolled in the consulting module 17b (*„Methods of organic agriculture"*).

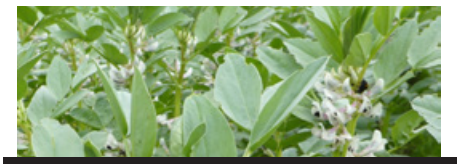
The Syndicat des Eaux du Sud (SES) also proposed to cooperate with IBLA in 2017 with the aim of introducing local farmers operating in the drinking water catchment areas to the methods of organic agriculture. Aside from collaborating with IBLA on the Schlassbierg and HerbiFreeWeedControl projects, the SES also refunded farmers' participation fees for the consulting modules 17a, 17b, 8 and 9.

The Agricultural Cooperation Upper Sauer (Landwirtschaftlech Kooperatioun Uerwersauer, LAKU) again agreed to refund farmers' participation fees for the consulting modules 17a and 17b as well. Furthermore, IBLA participates in LAKU's working groups *"AG Water Protection"* and *"AS Fertilisation planning"*, and is a member of its Monitoring Committee.

Through its cooperation with these water providers, IBLA will continue to actively support the protection of our drinking water.

EVENTS 2017

JANUARY



› SPECIES INFORMATION MEETING /
26.01.2017, Beringen

Organiser: LSG
Presentation: Dr. Hanna Heidt

FEBRUARY

› AUTOGRASSMILK / ON FARM SHOW
03.02.2017, Weiler

Organisation: FILL, CONVIS, LTA, ASTA, SER, IBLA
Motto: Subsidy for grazing

› 5. LEGUME DAY /
15.02.2017, Ettelbrück

Organisation: IBLA Research & Development
Motto: Legumes in rotation: is rotation all there is?
Speaker: Prof. Dr. Maria Finckh (University of Kassel), Evelyne Stoll (IBLA), Dr. Stéphanie Zimmer (IBLA), Serge Heuschling (LTA), Dr. Jochen Mayer (Agroscope Schweiz)

MARCH

› SEMINAR / Unprocessed wine - outdated tradition or rediscovery of the terroir?
02.03.2017, Ellange

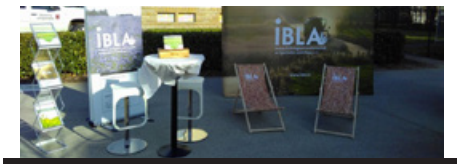
Organisation: IBLA Viticulture Consulting
Speaker: Martin Darting

› SCIENCE CONFERENCE ON ORGANIC FARMING /
07.-10.03.2017, Weihenstephan

Organiser: SÖL, TUM, LfL, HSWT
Presentation: Dr. Hanna Heidt, Evelyne Stoll, Dr. Stéphanie Zimmer

› SÖL CONSULTANT MEETING /
09.-10.03.2017, St.Ulrich

Organisation: Foundation for Ecology and Agriculture (Stiftung Ökologie und Landbau)
Technical support: Beate Fader (DLR Rheinhessen, Nahe, Hundsrück) und Sonja Kanthak (IBLA Viticulture Consulting)



› DAY WITHOUT PESTICIDES /
25.03.2017, Junglinster

Presentation: Dr. Stéphanie Zimmer
Display stand: general presentation of IBLA; visitors received information about current projects as well as organic agriculture in Luxembourg

APRIL

› AUTOGRASSMILK / ON FARM SHOW
27.04.2017, Erpeldange (Ettelbrück)

Organisation: FILL, CONVIS, LTA, ASTA, SER, IBLA
Motto: Grass silage – quality at the first cut for healthy cows throughout the winter

MAY

› EXCURSION / From weed control to weed regulation
11.05.2017, Birelergronn

Organisation: IBLA, City of Luxembourg
Motto: analysis of the weed situation on various farms to extrapolate recommendations for improving future land cultivation based on the recorded observations

› AGRICULTURE INNOVATION GROUP/
23.05.2017, Rollingen

Organisation: IBLA
Motto: Discussion of current practice -related issues and development of target-oriented approaches to the issues at stake

JUNE

› EXCURSION / Milk production using short-grass pasture and husbandry of beef cattle in the family association
06.06. - 08.06.2017, Hessen

Organisation: IBLA, Chamber of Agriculture of North Rhine-Westphalia
Funding: financing for this excursion came from the ASTA action plan for organic agricultur

› SEMINAR / Biodiversity in the vineyard
27.06.2017, Canach

Organisation: IBLA Viticulture Consulting and IVV
Speakers: Prof. Dr. Armin R. Gemmrich

JULY

› AGRICULTURAL FAIR (FOIRE AGRICOLE) /
30.06-02.07.2017, Ettelbrück

Display stand: IBLA presented the new SMART Farm Tool and organised a workshop for children

› OFFICIAL FIELD DAY /
07.07.2017, Hupperdang

Organisation: IBLA Research & Development, LTA and the National Commission on Plant Species
Presentation: Trials with different species (organic and conventional)
Participants: Carole Dieschbourg (Minister for the Environment) and around 70 interested participants

› SEMINAR / Understanding and applying organic dynamic compounds
12.07.2017, Remerschen

Organisation: IBLA Viticulture Consulting
Speaker: Dr. Jürgen Fritz

› ENJOY WITH NATURATA / My wine, my winegrower
13.07.2017, Munsbach

Organisation: Naturata
Presentation: Sonja Kanthak

› GO URBAN / Open Door
23.07.2017, Kirchberg

Organisation: Boy and Girl Scouts Luxembourg
Presentation: general presentation of IBLA; visitors gained insights into agronomy by means of field trials
Participants: 10.000

› WHY RESEARCH IN AGRICULTURE? /
24.07.2017, Kirchberg

Organisation: IBLA Research & Development
Speaker: Prof. Dr. Urs Niggli (FiBL)
Panel discussion: Prof. Dr. Urs Niggli, Marc Schiltz (FNR), Marc Weyland (ASTA), Guy Reyland (LTA); Marc Emering (organic farmer)
Participants: 60 interested parties from the agricultural sector as well as from the general public

› EXCURSION / South Tyrol - Viticulture
27.07. -30.07.2017

Organisation: IBLA Viticulture Consulting
Funding: financing for this excursion came from the ASTA action plan for organic agriculture

AUGUST

SEPTEMBER

› JANNUAL ORGANIC VITICULTURE PRESS CONFERENCE /
06.09.2017, Bech-Kleinmacher

Organisation: IBLA Viticulture Consulting

› SPECIES INFORMATION MEETING /
06.09.2017, Beringen

Organiser: LSG
Presentation: Dr. Hanna Heidt

› BIRD-WATCH DAY & ORGANIC MARKET /
30.09.2017, Biodiversum Remerschen

Display stand: general presentation of IBLA; visitors received information about current projects as well as organic agriculture in Luxembourg

OCTOBER

NOVEMBER

› ENVIRONMENTALIIMPLEMENTATION REVIEW - LUXEMBOURG COUNTRY DIALOGUE /
12.11.2017, Kirchberg

Organiser: Ministry for Sustainable Development and Infrastructures, European Commission
Presentation: Dr. Stéphanie Zimmer

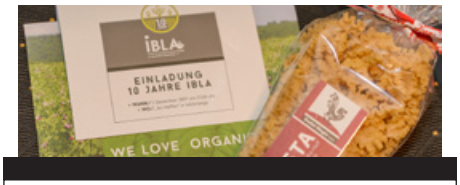
› SEMINAR ON SOIL / Healthy land, clean water
20.11.2017, Rollingergrund

Organisation: IBLA Agriculture Consulting, City of Luxembourg, Chamber of Agriculture
Presentation: Moritz Colbus (LWK Constulting), Alain Majerus (LWK Consulting), Gilles Altmann (IBLA consulting), Rudolf Leifert (IBLA consulting)
Practical field demonstration: Rudolf Leifert (IBLA Consulting)

› AUTOGRASSMILK / ON FARM SHOW
21.11.2017, Hoscheid-Dickt

Organisation: FILL, CONVIS, LTA, SER, ASTA, IBLA
Motto: Hay ventilation - an alternative?

DECEMBER



› 10 YEARS OF IBLA /
01.12.2017, Wickrange

Organisation: IBLA
SpeakersClaude Felten (IBLA President), Dr. Stéphanie Zimmer (IBLA), Dr. Dora Drexler (ÖMKI)

› FIBL TEAM MEETING /
11.12.2017, Frick

Organiser: FiBL
Presentation: Dr. Stéphanie Zimmer

2018

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10 YEARS OF RESEARCH AND CONSULTING ON ORGANIC AGRICULTURE

IBLA - Institut fir biologesch Landwirtschaft an Agrarkultur Luxemburg a.s.b.l. (Institute for organic farming Luxembourg) - celebrated its 10th anniversary in style on Friday, 1 December 2017, at „An Haffen" in Wickrange.

After a warm welcome by IBLA President Claude Felten, Director Dr Stéphanie Zimmer reported on milestones, achieved goals as well as IBLA's future projects and visions. She particularly emphasised IBLA's unique strength to combine research and consultancy under one roof. True to the motto *„Research for and with the practice"*, IBLA highly values the direct contact with farmers in seminars, field inspections and via information material that allows for a fast knowledge transfer between the fields of research and practical consultancy. This furthermore includes learning about farmers' daily struggles and challenges and integrating them into the research, which is a vital step of IBLA's process.

Guest speaker Dr Dora Drexler introduced the Hungarian sister institute ÖMKI and highlighted many parallels to Luxembourg's IBLA. Minister for the Environment Carole Dieschbourg and Minister of Agriculture Fernand Etgen congratulated IBLA on its valuable work towards a more sustainable agriculture and encouraged it to continue its efforts in such a successful manner.

During the organic walking dinner, with musical accompaniment by Saxitude, guests were given the opportunity to bid on sponsorships of upcoming IBLA projects, thus actively contributing to the future development of organic agriculture. IBLA relies on donations to be able to maintain its independence as a research institute – and the bidders rose to the plate.





Henri Zimmer purchased a sponsorship for the organically grown potato variety trial; he will receive part of the potato harvest in 2018 and will be able to savour the taste of the different varieties himself in the potato-cooking test. Dr Jean Schoos won the bid for *„One Day in the Shoes of an Researcher"*; next year, he will accompany the IBLA research team to the agricultural trial plots. Minister Carole Dieschbourg was also among the bidders; not only did she privately bid on and win a sponsorship of the SustEATable project, her Ministry also committed to partly funding the project.

Focussing on the sustainability of agricultural holdings, the SustEATable project takes into consideration not only environmental but also managerial, economic and social aspects. Aender Schanck surprised IBLA with a special kind of birthday present: a donation for €25,000 each in support of the SustEATable project on behalf of OIKOPOLIS S.A and BIOGROS S.A..

At this point, we would like to reiterate our thanks to the many sponsors of IBLA's 10-year anniversary celebration, as well as to our partners for the years of fruitful cooperation.

IBLA now looks forward to the next 10 years with enthusiasm and zest for action.

FIDUCIAIRE CLAUDE UHRES & CIE SA conseils comptables et fiscaux

NATURATA Bio genëissen

MARC WILMES DESIGN.lu

dsl

Foyer Daniel PAX Agence Principale d'Assurances pax@agencefoyer.lu

GARAGE WEBER REMERSCHEN PEUGEOT MOTION & EMOTION

KRIER - BISENIUS DOMAINE VITICOLE

SUNNEN-HOFFMANN DOMAINE VITICOLE

Bio-Lëtzebuerg Vereenegung fir Bio-Landwirtschaft Lëtzebuerg asbl

Dudel-Magie

Lycée Technique Agricole

Colling-von Roesgen

ah! an haffen

Saxitude.com

Oiko Bakhaus

RESEARCH AND DEVELOPMENT

IBLA's Research and Development Department was founded in 2009. Apart from the study and development of practical methods for an organic and biodynamic agriculture, the objectives of the Research and Development Department include the examination of the socially relevant aspects of farming. Moreover, the promotion of education in organic and biodynamic agriculture plays an important role.

The agronomists Stéphanie Zimmer, Hanna Heidt, Evelyne Stoll, Laura Leimbrock and Gilles Altmann are working on various national and international research projects with a focus on agronomic breeding, legumes, soil and water protection, circular economy and sustainability assessment. With the launch of the LeguTec project, which explores mechanical weed control in the cultivation of soy, in 2017, the thematic focus on legume cultivation could be further intensified. The sustainability assessment also played an important role in 2017. The pilot project „Holistic sustainability analysis of farms" allowed the team to gain some initial experience with the SMART (Sustainability Monitoring and Assessment RouTine) Farm Tool in Luxembourg and to adapt the tool to the country.

By collaborating on various scientific projects, IBLA is actively involved in several national and international research networks. In particular, it closely cooperates with the Lycée techique agricole (LTA), the Luxembourg Institute of Science and Technology (LIST), the Luxembourg Institute of Health (LIH), the FILL in Luxembourg and the FiBL in Switzerland.

In addition, IBLA is in charge of the organic variety trials in Luxembourg (winter cereal crops since 2009, and spring grain legumes and potatoes since 2016).

PROJECTS IN THE YEAR 2017

In 2017, IBLA implemented 11 projects:

Projects within the framework of the action plan for organic agriculture in Luxembourg

- Information sheets on organic agriculture
- Network of demonstration farms showcasing organic farming
- Pilot project *„Holistic sustainability analysis of farms“*
- Potato variety trials in organic agriculture in Luxembourg

These projects were commissioned and (co-)funded by the Technical Services Administration for Agriculture, a department of the Ministry of Agriculture, Viticulture and Consumer Protection (Administration des services techniques de l'Agriculture, ASTA) within the context of the action plan for organic agriculture.

Weitere Projekte im Jahr 2017

- Winter cereal variety trials in organic farming in Luxembourg
- Spring grain legume variety trials in organic agriculture in Luxembourg
- LeguTec: Sustainable, resource-efficient protein production by means of mechanical herbicide-free weed regulation techniques in grain legume cultivation, using the example of soybean
- Go Crop Research - discover and explore agriculture
- EIP Agri Rhineland-Palatinate *„Grassland and animal health“*
- AutoGrassMilk
- Pilot project *„Schlassbierg“*

INFORMATION LEAFLETS ON ORGANIC AGRICULTURE

Cooperation with European partners allows for the distribution of technical information brochures among organic farmers and other interested parties in Luxembourg. This facilitates access to extensive know-how and the latest research from abroad.

One fact sheet was issued in 2017:

Calf breeding involving mother cows and nursing cows in dairy farming

Farmers show increasing interest in calf breeding involving mother cows and nursing cows. More and more dairy farmers want to let their calves stay with their mothers for a longer period of time while still milking the latter. This way, the cow and the calf can experience a more intense natural relationship.

Some stockbreeders and livestock farmers have gained experience with calf breeding involving mother cows and nursing cows and have subsequently developed their own procedures. This fact sheet details said procedures and makes them accessible to other dairy farmers. The guide provides numerous ideas for implementing this way of calf rearing and appropriate stable furnishings.

The leaflet has been revised by all partners and is available in PDF format.

A fact sheet on **species-appropriate veal fattening and rearing of fattening cattle** has furthermore been in preparation in 2017. Since the strong increase in the demand for organic milk in the 1980s, most calves reared on organic farms that are not used for restocking start conventional fattening after a few weeks. Given the significant use of antibiotics, this situation is unsatisfactory from the point of view of organic farming. This fact sheet provides didactic information as well as practical examples.

The issue in question has already been published in Switzerland. The European edition is currently being prepared for publication.

This fact sheet will be revised and edited by all partners.

Project partner

FiBL

Funding

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture,
de la Viticulture et de la
Protection des consommateurs

Administration des services techniques
de l'agriculture

ORGANIC DEMONSTRATION FARMS

The network of demonstration farms in Luxembourg was launched in order to enable consumers to experience organic farming and to promote knowledge and experience sharing between farmers. The network consists of a total of nine organic farms, organising professional exchanges between colleagues, visits by kindergartens and school classes and guided tours for groups of consumers several times a year. The organic nursery *„op der Schanz“* Altréier Sàrl was admitted into the „Organic farming“ network of demonstration farms in 2017; in this context, it has agreed to open its doors for both consumers and professional colleagues. On average, the holdings organise eight events a year. The nine demonstration farms in question demonstrate how versatile (organic) agriculture can be

Demonstration farm	Manager	Main areas of activity
Jeekel's Haff Pétange	Guy Arend-Stemper	Suckler cow husbandry, crop farming, grassland, seed multiplication, farm shop
Organic farm "an Dudel" Sprinkange	Marc Emering	Chicken fattening, crop farming, fruit growing, seed multiplication
„A Mechels“ Harlange	Marco Koeune	Dairy farming, crop farming, grassland
Karelshaff Colmar-Berg	Jean-Louis Colling-von Roesgen	Suckler cow husbandry, crop farming, grassland, seed multiplication, chicken fattening
Schanck-Haff Hupperdange	Jos Schanck	Dairy farming, crop farming, grassland, vegetable cultivation, BIOG cheese dairy, Naturata farm shop
Domaine Sunnen-Hoffmann Remerschen	Yves Sunnen und Corinne Kox-Sunnen	Viticulture and vine trade, grape juice, table grapes
Organic farm Baltes „A Schiewesch“ Stegen	Daniel und Myriam Baltes-Alt	Goat husbandry, goat cheese production, suckler cow husbandry, crop farming
Naturhaff Derenbach	Céline Girard und Christian Mathieu	Angus suckler cow husbandry, laying hen husbandry, conservation of the breeds 'Ardennais Roux' and 'White Polled Heath'
Organic nursery "Op of the Schanz" Altréier SARL Altrier	Carlo und Maggy Demuth, Hugo Krijnse-Locker	Vegetable cultivation (outdoors and in greenhouses), seedlings and herbs

As in previous years, the events at the demonstration farms attracted people from indergartens, farmers associations, tourists as well as policymakers – in short, people of all ages and socio-economic backgrounds. Practitioners could interact during field days. Farmers interested in converting their holdings got to know organic agriculture and ask any questions they might have had. The nine demonstration farms, which are located throughout the country, welcomed approximately 1000 visitors and hosted 70 events in total. The demonstration farms continue to serve as an ideal means to promote, support and make organic farming accessible to the public.

Funding

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture,
de la Viticulture et de la
Protection des consommateurs

Administration des services techniques
de l'agriculture

PILOT PROJECT – HOLISTIC SUSTAINABILITY ANALYSIS OF FARMS

smart
sustainability monitoring and assessment routine

The pilot scheme 'Holistic sustainability assessment of farms' is a joint project of IBLA (Institute for Organic Agriculture and Crop Cultivation Luxembourg), the SFS GmbH (Sustainable Food Systems) and FiBL (Research Institute for Organic Agriculture) Switzerland.

The aim of the project was to gain initial experience with the SMART sustainability assessment on conventional and organic farms in Luxembourg. For this purpose, 10 holdings (7 organic farms and 3 conventional farms) were selected in the framework of the 'Organic Agriculture' action plan set up by the Ministry of Agriculture and analysed in terms of their overall sustainability.

Using the SMART Farm Tool, the analysis of the status quo aims at identifying both certain aspects of farms that have already implemented sustainable production methods and areas with potential for improvement. Following the assessment, the respective holding receives a report including confirmation of its current sustainability performance. This report contains a detailed analysis of the farm's current state of operations and provides concrete indications for future improvements. In addition, the report can be used to communicate with customers and other stakeholders.

At this point, we would like to reiterate our heartfelt thanks to these farms for their cooperation and participation in the project.

The resulting sustainability analyses by means of the SMART Farm Tool proofed that said tool can successfully be used to analyse the overall sustainability of both organic and conventional farms in Luxembourg. The project also allowed for the identification of certain areas where adjustments need to be made to fit in light of Luxembourg's peculiarities. The adaptation process has already been initiated.

Project partner

FiBL sfs Sustainable Food Systems

Funding

NATURATA Bio Marché Fair a kooperativ mat de Bio-Baueren

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture, de la Viticulture et de la Protection des consommateurs
Administration des services techniques de l'agriculture

POTATO VARIETY TRIAL IN ORGANIC FARMING

In 2017, a potato variety trial was launched for the second year in a row on the Fischbach farm. The very high-quality standards, to which both the trade associations and the consumers hold the potatoes, require utmost care with regards to the preparation of the planting material, plant protection, nutrient and water supply as well as the harvest and storage of the crop. In fact, the quality of potato tubers can be influenced in no small way before, during, and after cultivation.

The proper variety selection plays an important role in organic farming. Given the absence of mineral fertilisers and chemical/synthetic pesticides, preference should be given to varieties that develop rapidly in the initial growth stages, whose tubers are prone to sprout early, and that exhibit a low susceptibility to disease, a low nitrogen requirement and a rapid herbage development in order to ensure a successful harvest. However, farmers mainly cultivate varieties that are commercially in demand. In this case, the wishes of consumers and sub-purchasers as well as the intended use of the potatoes inform the choice of the plant variety. In contrast, direct sellers have a slightly larger margin when selecting a variety.

To be able to provide organic farms in Luxembourg with useful results, the first potato variety trial was launched in Luxembourg in 2016 and repeated in 2017.

The trials involved the examination of 14 potato varieties in terms of their suitability for agricultural cultivation and market appeal.

Question:

- What potato varieties are suitable for organic farming in Luxembourg?

Overall, the results from the test year have been positive; however, since it is a two-year trial and the latest results are not yet available, variety recommendations have not yet been issued for this year. The average results from at least three years of testing are required to derive reliable statements about the suitability of individual varieties.

Project partner

Lycée Technique Agricole

Funding

BIO GROS Produits biologiques et durables

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture, de la Viticulture et de la Protection des consommateurs
Administration des services techniques de l'agriculture

WINTER CROP VARIETY TRIALS

The season 2016/17 was already the seventh time the winter cereal variety trials were implemented in Colmar-Berg and the fourth trial year in Hupperdange. Three cereal varieties were selected for the trials: - winter triticale, winter rye and winter wheat. 30 varieties of wheat were studied, namely 16 conventional varieties and 14 organic varieties. Moreover, the trials included 11 varieties of triticale (two of them organic) and 12 varieties of rye (4 of them organic). The assessment of the varieties took into account the development of the respective plants as well as yield and quality parameters.

The focus of the trails lies on two research questions:

- Which winter wheat, winter triticale and winter rye varieties are suitable for organic cultivation on Luxembourg's fields?
- How do the organically bred varieties hold up in the context of organic agriculture in Luxembourg?

The 2016/17 season was marked by a long-lasting drought in the spring/summer. This resulted in severe drought stress, especially on the Karelshaff farm, where the stony ground is characterised by a low water retention capacity. This greatly restricted the growth and development of wheat on the Karelshaff site; consequently, the wheat succumbed to the weed dispersion. The weed infestation assumed such significant proportions that the wheat could not be harvested at all at the Karelshaff farm. In general, harvest yields were low and protein contents average in 2017 due to the prolonged drought. Yet, the sedimentation values (according to Zeleny) suggest high gluten contents; the values for falling numbers, however, overwhelmingly indicate problems with outgrowth.

Regarding winter wheat, the E wheat Govelino was included on the official list of Luxembourg varieties as a recommendation for organic farming; on the other hand, the A wheat Achat was removed from the list (Variety Commission meeting on 31.08.2017). Thus, the varieties Govelino, Jularo, Florian, and Genius (all four are E wheat) as well as Elixer (a C wheat) are now featured on the list of varieties. No changes were made regarding winter triticale and winter rye, meaning that Tulus (winter triticale) and Dukato (winter rye) remain on the list of varieties.

During the vegetation period, a site inspection of the trial fields was organised, and practitioners were invited to evaluate the organically grown winter crops. Minister for Environment Carole Dieschbourg and numerous farmers attended an afternoon field inspection on 7th July. The National Variety Commission - in collaboration with IBLA and LTA – organised this official field day, which also included the visitation of variety trial sites involving conventional winter and summer crops over the course of the afternoon. Lively discussions arose during the site inspection, mainly on the year's long-lasting drought in the spring and early summer.

Project partner

Lycée Technique Agricole

Funding

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture,
de la Viticulture et de la
Protection des consommateurs

GRAIN LEGUME VARIETY TRIALS IN ORGANIC FARMING

In 2017, the organically grown spring grain legume trials were launched for the second time in Colmar-Berg and in Bous. Two trial species were selected: spring peas and spring faba beans. A total of 15 spring pea and 10 spring faba bean varieties were tested. The assessment of the different varieties took into account plant development, yield and quality parameters.

The project focused on the following research question:

- What spring faba bean and spring pea varieties are suitable for organic cultivation in Luxembourg?

Generally, the 2017 season was characterised by a dry spring and a damp summer. The drought during the spring hampered the growth of the beans on both sites, especially on Karelshaff, where the results of the bean trials could not be evaluated due to the insufficient growth of the plants. Given the overly late onset of moisture in the summer, weed growth only took off at the end of the growing season. This led to a strong late weed dispersion on the spring pea trial sites and caused difficulties during harvest since the peas were in some cases very strongly lodged.

The health condition of the spring beans as well as the spring peas remained positive in the spring and early summer thanks to the dry weather; botrytis fabae infection and sitonas lineatus caused only minor damage. The condition of the beans deteriorated at the end of the growing period, when rust damage was detected. Overall, the yields and protein contents of the spring peas turned out to be higher than in the previous year. In general, the bean-related results indicated average yields and high protein levels.

As in the previous year, the overall results of this trial year are positive despite the strong drought in the spring and the problematic harvest. Again, no variety recommendations can be derived for this year because the trails only ran over the course of two years. The average value of the results gathered over a period of at least three years are required in order to formulate reliable statements about the suitability of individual varieties. However, trends can be derived from the two-year results. Among the summer peas, the Alvesta and LG Auris varieties stood out positively for cultivation in Luxembourg, while Bioro and Fanfare (colourful flowering) as well as Gloria (white flowering) were the spring faba bean varieties that thrived most.

Project partnert

Lycée Technique Agricole

Funding

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Agriculture, de la Viticulture et de la Protection des consommateurs

LEGUTEC

Sustainable, resource-efficient protein production by means of mechanical herbicide-free weed regulation techniques in grain legume cultivation, using the example of the soybean

Soy is a wonder bean! Boasting a protein content of about 40% and a very high nutritional value due to its ideal amino acid composition, the soybean is one of the main sources of protein in animal feed. Thanks to new varieties, it no longer grows exclusively in optimum-temperature regions. Due to their multitude of positive qualities, soybeans do not only constitute an ideal source of protein for use in organic agriculture; the cultivation of soy also expands and loosens the crop rotation, improves soil fertility thanks to its capacity for nitrogen fixation, and leads to a reduction in the use of nitrogen fertiliser. However, apart from the challenging nature of soy cultivation, the further processing of the beans is still not guaranteed in Luxembourg, and there are knowledge gaps within the field, especially regarding efficient, sustainable weed regulation.

The following question now arises: how can this barrier to soy cultivation be overcome and regionally stable and sufficient soy yields be guaranteed?

As of spring 2018, the LeguTec project will involve the testing and comparing of various mechanical weed regulation methods on three organic farms in Luxembourg as well as on a n-farm trial plot at the Lycée Technique Agricole. The aim of the project is thus to use the case of soybean cultivation to find the best possible mechanical weed regulation method for grain legume cultivation in terms of location, weed intensity and yield. The project should further identify modern ways to regulate the weed infestation in grain legumes, thus stimulating a sustainable and resource-efficient protein production in Luxembourg.

Project / October 2017 – September 2020

Projekct partner

Lycée Technique Agricole

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GO CROP RESEARCH – DISCOVER AND EXPLORE AGRICULTURE

In the context of the Go Urban scouts camp, which took place from 18th to 28th July 2017 in Kirchberg/Luxembourg, IBLA organised two workshops on the subject of agriculture, attended by members of both national and international scout organisations. To show the adolescents participating in the workshops what IBLA's research projects are all about, IBLA had already sown different plant varieties as well as prepared small field trials and demonstration areas in Kirchberg at the end of 2016 and in the spring of 2017.

The daylong workshop *"Go Crop Research: Field Research in Agriculture"* gave the scouts a chance to see what it is like to work as an agricultural researcher. The first part of the workshop explained the importance of a well-selected crop rotation, meaning the succession of different cultures on a field. Afterwards, the young participants got a taste of the practical work of an agricultural researcher as they identified appropriate winter crop varieties for the site. The last part of the day introduced the scouts to legumes, such as peas, which enter into a symbiosis with nodule bacteria in order to absorb nitrogen from the air; they thus recognised the importance of legumes in a crop rotation.

Alongside the daylong workshop, the workshop *"The earthworm never takes a day off!"* was held during half a day as part of the Go Crop Research initiative. Through exciting experiments, the young scouts learned about the importance of earthworms for soil fertility. The topic of soil and its various functions was illustrated using a specific soil profile. Moreover, the role soil plays in the regeneration of our drinking water was demonstrated by means of filter experiments. The workshop finished with a closer look at the soil life and a subsequent earthworm extraction.

Besides the two workshops, an evening event featuring Professor Dr Urs Niggli from Switzerland was held in the TriDome tent on 24 July 2017. During the event, Urs Niggli delivered a lecture entitled *"Why research in agriculture?"*, followed by a panel discussion on said topic. Moreover, IBLA set up a stand at the "Open Field Day" of the camp to inform the public about research in agriculture.

Project partner

Lycée Technique Agricole

Go FARM

Funding

Fonds National de la Recherche Luxembourg

NATURATA Bio Marché – Fair a kooperativ mat de Bio-Baueren

EIP – GRASSLAND AND ANIMAL HEALTH IN THE EIFEL REGION

This project addresses the optimisation of permanent grassland, pasture management, multiannual arable feed crop production and feed preservation; its objective is to improve the economic viability, animal health, value creation and sustainability of dairy farming in the grassland region in a sustainable way.

Recent decades saw an increase in the spread of illnesses on dairy farms that can no longer be attributed to traditional disease patterns. Subclinical acidosis, subclinical ketose disorder, Mortellaro and other diseases did not manifest themselves 40 years ago. These disease patterns, the causes of which can be ascribed to more than one factor, can no longer be medically analysed and determined without ambiguity. They are therefore grouped together under the term *"factor disease"*. The disciplinary approach to both consulting and research involves the traditional methodology, which complicates the analysis of causal relationships within more complex systems such as the husbandry and feeding of dairy cows. An interdisciplinary approach is essential to improve milk production in a sustainable and economically viable way. Such an innovative, interdisciplinary modus operandi must refer to the actors in the field (practitioners, consultants, researchers) as well as the executed observations and analyses (soil, grassland, fodder conservation, feeding, and animal health).

The objectives of the project are the following:

- Analyse grassland and arable feed crop production in terms of their yields, taking into account the fertilisation and the cutting time
- Improve the silage process with a view to reducing the pure protein degradation and identify alternatives to the silage process
- Analyse the impact that grassland cultivation, arable feed crop production, and preservation methods have on the fodder intake and health of dairy cows in order to improve the economic viability of dairy farming as a whole

Implementation

After mainly focussing on the preparation of the measures set out in the action plan in 2016, we were able to launch the practical implementation of the study on the farms in 2017.

This primarily involved monthly visits to the farms, including an evaluation of all the cows using BCS (body condition score) and LS (locomotion score), the identification of pre-emptive measures, and the ration patterns on the farms. In addition, the blood of all the cows that were in the 2-6-week timeslot of their lactation cycle was tested every two months.

At the beginning of the vegetation period in spring, press juice examinations were conducted over the course of the entire growing season to check the nitrate, ammonium and total sugar levels. The yield of the observation plots was recorded at each respective cutting time by weighing the yield of small representative plots and subsequently determining the TM.

The introduction of a uniform documentation method as well as the evaluation of common animal diseases and hoof and claw diseases on holdings run by different farmers quickly turned out to be a great challenge. A satisfactory assessment was achieved by having all participants attend several workshops during the first half of 2017.

Hence, we were able to reach our main goal, namely to implement a comprehensive and uniform data collection methodology on the farms, with ease in 2017.

On this basis, we will once again implement the measures in the grassland in 2018. The herd observation and the recording of the impact that the silages produced in 2018 have on animal health will take place up until mid-2019.

Project partner

TH BINGEN University of Applied Sciences

d-p agro soft

Dr. Andrea Fiedler

Funding

AUTOGRASSMILK

Autograssmilk (AGM) is based on an FP7 research project of the European Union, which emphasises the combination of automatic milking systems (AMS) with pasture grazing. For the original AGM project, research institutions from seven countries (Belgium, Denmark, France, Ireland, Netherlands, Sweden and Luxembourg) collaborated from 2013 to 2015. FILL (association for the promotion of integrated farming in Luxembourg) initiated the Luxembourgish project. In an exemplary display of collaboration, the organisations ASTA, CONVIS, IBLA, LTA and SER handled the practical implementation of the project, which was subsidised by the Luxembourg Ministry for Agriculture.

Given the significant interest in the European AGM project among agricultural practitioners, the Ministry for Agriculture decided to extend the lifespan of the project for another four years (2016-2019) on a national basis and to continue to support it financially.

Five pilot holdings are currently participating in the AGM project in Luxembourg, including one organic dairy farm (the Dormans-Reiff family from Fischbach / Clervaux). Apart from the regularly scheduled pilot-holding meetings, the AGM team organised three on-farm shows in 2017, in which IBLA was actively involved. Supporting the farmers in the context of the new AUK promoting the pasturage of dairy cows became one of the priorities at these events. The participation in FAE and AGGF as well as the organisation of two educational trips to the Netherlands and Ireland respectively allowed for the transfer of knowledge and the accomplishment of valuable public relations work.

Project partner

Funding

PILOT PROJECT - SCHLASSBIERG

Since 2016, IBLA has been collaborating with the Syndicat des Eaux Sud (SES) and the Chamber of Agriculture in the context of the *"Schlassbierg"* pilot project. Continuing in the vein of previous projects for improving the quality of drinking water (the proposed measures of which mainly focused on reducing fertilisation and the amounts of used pesticides), the current project is intended to go even further. The aim is to forego all mineral fertilisers and chemical-synthetic pesticides on the *"Schlassbierg"* plateau.

The project offers the unique opportunity to examine the impact that a complete refusal to use mineral fertilisers and chemical-synthetic pesticides has on the water quality. The entire plateau is the private property of a single owner, all surfaces are cultivated by a single farmer and five springs are fed from this plateau alone. Hence, the effect that a change in the management of the fields has on the quality of the drinking water can be recorded and analysed on the basis of two reinforced springs (sources of drinking water) and three wild springs (natural sources); in fact, the activities on the plateau are reflected directly in the springs. Both the composition of the drinking water and the overall water quality will thus be considered in the evaluation of the *"Schlassbierg"* project.

The aim of the project is to abandon the use of all mineral fertilisers and chemical-synthetic pesticides in order to analyse the impact that this agricultural practices have on the drinking water quality of the springs. The following questions are addressed in this context:

- What implications does the described procedural change have for the quality of the drinking water springing from the two reinforced sources as well as for the quality of the water springing from the three wild sources, respectively?
- What changes are necessary in order to achieve stable yields despite not using pesticides and mineral fertilisers?
- What levels will crop shortfalls reach?

Project partner

Fiunding

SYNDICAT DES EAUX DU SUD

CONSULTING

IBLA's consultancy department for organic agriculture welcomes all farmers and winegrowers who are interested in organic farming and the implementation of related principles and methods on their farms/vineyards. Our consultants are there to advice and support all interested farmers, whether they are considering transitioning their holding into an organic farm, they are currently undergoing a restructuring or they are already a recognised organic producer. The experts at IBLA's consultancy department will address whatever concrete problems or questions they might have regarding organic farming methods. The range of IBLA's consulting services focalises on both agriculture and viticulture. On the one hand, the offered assistance includes on-site consulting for farms that require help in converting their business as well as for recognised organic holdings that want to optimise their operations. On the other hand, the consultancy service organises seminars, field surveys and excursions to share and update industry-specific information on particular areas of focus. These events further allow for an exchange between external experts and professional colleagues, thus contributing to the individual success of each farm.

IBLA's consulting service involves the collaboration with other relevant institutions in Luxembourg as well as other consultancy centres. In addition, we extensively exchange knowledge of technical and methodological developments with organisations as well as experts and professional practitioners from abroad.

Our consulting service is firmly embedded within IBLA's activities, facilitating its cooperation with the Research and Development Department. This way, new findings can directly inform the advice we offer; on the other hand, issues that arise in everyday farming can be included in the research.

IBLA AGRICULTURE CONSULTING

Rudolf Leifert, a certified farmer who has been active in the field of organic agriculture since 1979, and Gilles Altmann, MSc. Crop Sciences, provide advice on agriculture-related issues and questions. During their training and yearlong practical experience, our consultants gained in-depth knowledge of all aspects of organic agriculture.

According to their individual and personal requirements, the agricultural holdings receive bespoke advice on all farming-related questions they might have, including crop cultivation, grassland, husbandry and feeding. The farms are extensively supported before and during their transitional period and informed about the chances and risks involved in adapting organic farming methods. The offered consultation includes guidance on crop rotation sequencing, fertilisation and tillage in forage and cash crop cultivation in order to improve the natural soil fertility and yield potential. The particular strengths of IBLA's consultancy also include the overall consideration of breeding, guidance on feeding, ration calculations and grassland management with regards to animal health. The agriculture consultants use the results of IBLA's plant species and variety trials when making species- and variety-related recommendations. Based on the results of said species and variety trials, our consultants further offer specialised advice in the field of legume cultivation, namely regarding the species and variety selection as well as the appropriate cultivation technique.

Operational analyses and farm-specific support in the implementation of organic farming guidelines complete the offer of IBLA's consultancy.

IBLA VITICULTURE CONSULTING

Sonja Kanthak, a certified winegrower, communications officer and holder of a Bachelor's Degree in Organic Agriculture and Marketing, advises farmers on all viticulture-related questions, ranging from organic vineyard cultivation and greening to plant protection and organic winemaking. The wine-growing estates can count on receiving target-specific support before, during and after their transition. Moreover, our consulting service always takes into account each holding's particular features as well as the weather conditions on site. Regular vineyard inspections and newsletters sent throughout the growing season provide the winegrowers with important, up-to-date information. In addition, the winegrowers benefit from the close exchange between the Research Department and the Consulting Department at IBLA.

BERATUNGSMODULE 2017

Nr.	Module	Target audience	Max. funding / rate of aid	State subsidy	Individual participa-tion fees
15.1	Organic agriculture – Pre-transitional initial consultation	for conventional holdings	800 € / 100%	800 €	0 €
15.2	Organic agriculture – Pre-transition, intensive	for conventional holdings	1.500 € / 100%	1.500 €	0 €
16	Organic agriculture – Transition	for holdings under con-version	1.500 € / 100%	1.500 €	0 €
17a	Organic agriculture	for certified organic holdings	1.875 € / 80%	1.500 €	375 €
17b	Methods used in organic agriculture	for conventional holdings	600 € / 80%	480 €	120 €
8	Legume cultivation	for all holdings	600 € / 80%	480 €	120 €
9	Group consultation on crop cultivation	for all holdings	520 € / 50%	260 €	260 €
23.1	Organic viticulture – Pre-transitional initial consultation	for conventional holdings	800 € / 100%	800 €	0 €
23.2	Organic viticulture – Pre-transition, intensive	for conventional holdings	1.500 € / 100%	1.500 €	0 €
24	Organic viticulture – Transition	for holdings under con-version	1.500 € / 100%	1.500 €	0 €
25a.1	Organic viticulture – soil fertility	for certified organic holdings (>0,1 ha)	1.875 € / 80%	1.500 €	375 €
25a.2	Organic viticulture – plant health	for certified organic holdings (>0,1 ha)	1.875 € / 80%	1.500 €	375 €
25b.1	Methods used in organic viticulture – soil fertility	or conventional, partially converted and certified organic holdings (<0,1 ha)	600 € / 80%	480 €	120 €
25b.2	Methods used in organic viticulture – plant health	for conventional, partially converted and certified organic holdings (<0,1 ha)	600 € / 80%	480 €	120 €

Private participation fees

Each year, Bio-Lëtzebuerg pays the participation fees for up to three agricultural/viticultural consultation modules attended by its members. Our consultancy services thus remain free of charge for farms/vineyards associated with Bio-Lëtzebuerg. LAKU also implemented a programme of measures that allows its members to apply for the reimbursement of their participation fees for the 17a and 17b modules. Farmers operating in the drinking water catchment area of Luxembourg City (Ville de Luxembourg, VdL) and the Syndicat des Eaux du Sud (SES) can be reimbursed for the participation fees paid for the modules by the water providers (17b, and 17a, 17b, 8 and 9, respectively).

AGRICULTURE CONSULTING

Pre-transitional consulting still very in demand
As was the case in 2016, a lot of holdings showed an interest in transitioning to organic agriculture in 2017 and consequently signed up to module 15.1 *"Organic Agriculture – Pre-transitional initial consultation"*. The objective of the module is to inform interested farmers about the basics of organic agricultrue. The particularities of each and every holding are considered, which permits the identification and discussion of the possibilities, requirements as well as limitations of their respective conversion to organic agriculture. The subsequent module 15.2 involves a more in-depth transition consultation. Apart from inspecting the existing stables and evaluating their suitability in terms of organic husbandry, the consultants analyse the health and structure of the fields at hand and discuss potentially required actions. The operational evaluation includes the adaptation of the existing crop rotation and land management to the tenets of organic agriculture. It further takes into account the husbandry and feed requirements. This allows for the determination of the costs and revenues resulting from the transition to organic agriculture as well as for comparisons with the current management style.

The intensive assistance of holdings in transition is also crucial given that converting a farm constitutes a source of considerable stress for the people involved.

Popularity of the module „Group consultation on crop cultivation"
Module 9 entitled *„Group consultation on crop cultivation"* was very popular in 2017. The two events in autumn were very well attended by farmers from all across the country.

Group consultation gives the farmers the opportunity to meet colleagues and to discuss all aspects of crop cultivation on the ground with the assistance and support of IBLA's consultants. It allows for an exchange of experiences, know-how, encountered problems and found solutions. Holdings that are in the middle of transitioning or that have only recently been officially recognised can particularly benefit from the experience of colleagues who have already practised organic agriculture for a while. Beginners can thus gather useful information and tips to manage their own lands as effectively as possible right from the beginning. Tillage also contributes considerably to the promotion and maintenance of the natural soil fertility.

Soil fertility remains crucial

Visits to farms accompanied by field surveys and spade diagnoses to evaluate the soil condition show that there is room for improvement when it comes to tillage and that this area will continue to require close cooperation with farmers in the future. It became obvious during several field surveys that the overall advice given to certified organic holdings in the module 17a ("Organic Agriculture") had produced significant improvements in terms of soil structure and health since the transition of the farms in question. It can therefore be ascertained that our consulting service produces tangible results and that the farmers are on the right track towards achieving their goal.

In addition, the basic supply of the soil with the nutrients phosphor and potassium requires further action since signs of deficiency occur in this area. Nutrient deficiencies are partially reflected in animal health and should therefore be addressed appropriately. To avoid any losses in yields, fertilisation strategies will have to be developed in the future as well, such as:

- Cooperation on fodder/dung among organic farms
- Additional purchase of dung originating from organic farms
- Use of compost
- Fertilisation with rock phosphates, „*Patentkali*" and kainite

Further tillage improvement also comes into play here since it promotes soil development and the concomitant occurrence of nutrients through soil-dwelling organisms, all of which is necessary for the development of a stable soil condition. Such a soil exhibits good flow absorption capacities thanks to an optimal pore distribution; it can absorb a lot of water in wet weather conditions and send water from deeper soil layers to the plants' roots during dry spells. A stable soil in good condition can evacuate large volumes of water to deeper soil layers without losing nutrients and prevents waterlogging, which hampers the warming of the soil.

Animal husbandry
In addition, our organic farm consultancy also focuses on the calculation of fodder rations to guarantee successful ruminant feeding.

Milk production is one of the most complex branches in agriculture. As a ruminant, the cow has the unique capacity to form protein out of NPN nitrogen and to consume energy through cellulose degradation – all by means of its rumen. This enables ruminants to consume grassland greenery and grass-clover ley, which monogastrics cannot; it also means that they constitute sources of high-quality foodstuffs for human consumption, namely milk and meat. As a further result, the ruminant that is fed basic fodder does not compete with humans for sources of food.

Healthy, self-contained managerial circuits are the basis of a sustainable organic crop cultivation. For this, we require a crop rotation that contains shares of grass-clover leys, alfalfa grass and alfalfa over a period of multiple years. Moreover, we need pasture farming, notably for aspects of climate and landscape protection. The use of these types of land would not be possible without ruminants, the only animals suited for such pastures. Ecologically, milk production is the soundest option in this case.

Sustainable organic agriculture would not be feasible without ruminants.

In conventional agriculture, the performance of our cows has more than doubled over the last decades due to progress made in breeding methods, changes in husbandry conditions and especially the significant transformation of the feed, evolving from the cellulose-heavy staple diet to starchy concentrated feed. However, this development has come at a cost, namely the economic lifespan and health of the animals.

The particular challenge of organic dairy farming lies in re-focussing both the feeding and the future evolution of breeding on the environmental imperatives. This means improving the return of basic fodder made from grass-clover leys and permanent grassland.

Legumes in the spotlight
Legumes remain of crucial importance for soil fertility and the food supply. Module 8 *("Legume Cultivation")* provides related advice for both conventional and organic farmers. Legumes promote a good soil structure, provide the farm with nitrogen and assure its self-sufficiency in terms of fodder. Grass-clover ley mixtures allow the soil to recuperate and generate valuable basic fodder. In years of uncertainty marked by drought and heat, as we have seen in 2017, mixtures of cereals and grain legumes can also be silaged as an alternative to threshing, thus remedying feed shortages.

Increased valorisation of grassland
Holdings that have not opted for a changeover to organic farming still made use of IBLA's consultancy service in 2017. Many farmers want to rely more on their own grassland when it comes to caring for their animals and, for instance, increase the proportion of clover through adapted fertilisation and care or reseeding. Furthermore, many farmers want to revaluate their existing feed rations to decrease their dependence on expensive concentrated feed.

The contribution of organic agriculture to the protection of drinking water
As cultivators of the land, farmers are increasingly called upon to do their part in protecting natural resources and especially our drinking water – all the more so since the apportionment of drinking water protection areas is fast approaching and agriculturists must adjust to farming restrictions. Taught in module 17b *("Methodology of organic agriculture")*, the methods of organic farming are particularly well suited for an environmentally conscious way of land cultivation. In this context, the project *"Healthy soil – clean water"* was organised in spring in cooperation with the City of Luxembourg and farmers were invited to an excursion on the topic of *"From weed control to weed regulation"*. The objective of the excursion was to illustrate how a weed infestation on farmland can be reduced by means of organic farming methods such as crop rotation and tillage, thus foregoing the use of herbicides. In the same vein, a seminar on the topic of "Soil" took place in autumn to educate the farmers in the catchment area on natural soil fertility, its evaluation, and adapting their tillage to the requirements of the soil.

Reciprocity of research and consultancy
When it comes to consulting conventional and organic holdings, farmers' practical experiences remain of significant importance; they can and must be passed on to newly certified as well as conventional holdings through an ongoing exchange of information and knowledge.

The close connection between research and consultancy at IBLA allows for the identification of knowledge gaps and areas of agricultural practice in need of research as well as the direct sharing of information with the farmers. This way, the above-mentioned problems and shortfalls can be addressed in a focused and efficient manner.

VITICULTURE CONSULTING

2017 - climate change looms on the horizon
The beginning of spring was characterised by unusually warm temperatures, bringing about an early start on the winegrowing season. The vines budded quickly, not to the delight of the winemakers. Unfortunately, polar air masses arrived in Luxembourg in late April, bringing with them several nights of frost and causing significant damage to the vines along the Luxembourg Moselle. In the south Moselle regions, the winemakers had better luck to a certain extent. The vineyards downstream and on the lower levels of the river were hit harder. The winemaker operating along the Sauer River also had to contend with the frost. Additionally, some wine-growing villages were hit by hail. The sixth year of IBLA's viticulture consulting service was marked significantly by these weather events.

Organic viticulture consulting offers attractive training and excursion options
Our organic viticulture consulting service launched interesting training sessions at the beginning of the season. A great success, the seminar *"Unprocessed wine - outdated tradition or rediscovery of the terroir?"* attracted numerous participants.

The frost was followed by dry and – in some instances - exceptionally hot weather in May and June. Due to the early budding, the vines flowered earlier than usual as well. Favoured by the warm and dry conditions, the flowering went smoothly. However, heat and especially drought further led to problems, quickly depleting the already low water supply in the ground.

At the end of June, 25 participants attended the seminar *"Recognising, appreciating and caring for biodiversity"*, which the *"Institute Viti-Vinicole"* and IBLA had set up together. *"Kanecher Wéngertsbierg"*, the oldest organically cultivated vineyard in Luxembourg, provided the perfect backdrop for this practical seminar. Professor Armin Gemmrich, one of the speakers, praised its uniquely favourable location in terms of biodiversity. In July, a seminar addressed all winemakers interested in organic-dynamic viticulture. In the practical seminar *"Understanding and using organic-dynamic compounds"*, Dr Jürgen Fritz lectured the 16 participants on how to prepare the compounds 500 and 501; they also conducted perception-related exercises. Viticulture consultant Sonja Kanthak moderated the event *"Mäi Wäin - mäi Wënzer" ("My wine – my winemaker")*, which took place at the Naturata Restaurant on 13th July. Delicacies from the region were served with wines from four organic Luxembourgish winegrowers.

An excursion to the south of Tyrol in late July convinced participants that organic viticulture is possible even under extreme conditions. With the support of PIWI International Group South Tyrol and the Consultancy Association of South Tyrol, we put together an intensive and instructive programme, which allowed the participants to get to know the structure of this particular wine-growing area. The Technical Services Administration for Agriculture, a department of the Ministry of Agriculture, Viticulture and Consumer Protection, subsidised the excursion as part of the action plan for organic agriculture.

Consulting and communication across all channels

The extreme weather conditions had an impact on the overall condition of the vines. We continuously provided advice on plant protection for the entire duration of the vegetation period by means of on-site consulting appointments, phone assistance and the BioLux *ticker, which was published on a regular basis during the vegetation period.

The vine protection season can be described as average. Due to the early-onset maturity, botrytis was the determining factor for the date of the harvest, which required delicate handling. The organic winemakers' traditional press conference took place before the harvest.

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