

Agroscope Research Programmes Newsletter

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Ladies and Gentlemen,
Dear Staff and Colleagues

The Agroscope Research Programmes are in year three of their running period. The first successes of the programme research initiated at the beginning of 2008 are apparent. Different project participants have presented their programme-research results or themselves organise conferences, e.g. the AgriMontana research programme with its conference on «Minimal land use in the mountain region».

At the same time, two years of way through the programme period, it is a good idea to review the situation and draw the appropriate conclusions for further programme development. An in-house survey confirms the programme managers' assessment that experience of the programmes to date has varied. On the one hand, it appears that the programme approach is fundamentally right and several project-overarching activities have emerged. On the other hand, the objective of close networking between various research groups has not yet been achieved. Initial measures for the optimisation of programme research have already been discussed and introduced.

In parallel with ongoing research activities, planning of the interim work programme 2012-2013 has started. The three current research programmes will continue until the end of 2013, as the programme approach is important for

Agroscope. By extending the programmes we want to further strengthen networking and cross-project collaboration within Agroscope, thereby tackling two programme weaknesses. We are simultaneously taking the opportunity of consolidating existing core areas and addressing further issues. The latter is taking place in close collaboration with programme forums and research groups involved in the programmes. The aim is to make the programmes more attractive to researchers by developing common goals and research topics which can be addressed in the interim work programme. Another aim of the planning phase is to plan the syntheses in the different core programme areas and secure the requisite resources.

Paul Steffen
Director, Agroscope Reckenholz-Tänikon Research Station
ART





Agriculture's contribution to the sustainable development of mountain areas

The AgriMontana Conference on «Mountain farming: minimal land use as part of multifunctionality» was held in Zurich on 19 March 2010. The background to the conference was the dramatic change in land use in mountain farming over the past few years, with land continually being abandoned. The topicality of the subject was highlighted by the final report of the 3rd National Forest Inventory, published in mid-March: within eleven years the area of woodland has increased dramatically, particularly in the alpine region. At around 600 square kilometres the increase is almost equivalent to the total area of the Canton of Glarus. This trend runs counter to the goal of keeping open and conserving the cultural landscape, and the decline in land use also has a negative impact on the multifunctional performance of mountain farming.

Various conflicts in land use

Various conflicts of aim and land use surround the issue of open countryside maintenance and minimum land use. Hillsides are affected mainly by progressive scrub encroachment. The only frequent exceptions are areas which feature in national and cantonal inventories and are contractually protected. On the one hand the abandonment of marginal land affects biodiversity conservation because these areas often have a greater variety of species. On the other, the mosaic of a diverse and structured landscape is altered.

There exist no simple solutions to preserve agricultural land

In future a mix of different land-use methods will also be needed to preserve multifunctional performance linked to land use. In addition to traditional mowing and pasturing, the grazing of small livestock or suitable breeds of cattle also has potential for combining extensive production with the keeping open and conservation of meadows and pastures. Although minimal solutions, for example mulching, are cost-effective methods of keeping land open, they have environmental drawbacks in the disappearance of the species characteristic of cultivated land. In regions where there is an increasing shortage of manpower needed to cultivate the land there is still a need for labour- and cost-extensive methods of keeping land open, and hence for the maintenance of cultivatable ground as an option for food production.

Targets as basis for performance-oriented forms of subsidies

In all likelihood the encroachment of woodland will continue. In order to prevent unchecked afforestation it will be necessary to prioritise land on the basis of demand for performance. Here environmental quality targets and social perception will indicate the priorities to be set from the point of view of biodiversity or landscape. Regionally graduated, performance-oriented forms of subsidy will be of central importance in future. In view of the progressive structural change in agriculture and the accompanying decline in agricultural manpower, the question now is who will ensure that the land is kept open in future.

You can find all the conference presentations as well as further information on the subject at www.agroscope.admin.ch/agrimontana.



Healthy, safe, premium-quality food of Swiss origin

There is a pressing need for research in clarifying the effect of natural food constituents on the human organism. It must be borne in mind that not all natural ingredients have a positive effect on health. Here in vitro model testing, animal testing and human trials could deliver relevant results.

Agroscope, together with the Inselspital in Bern, is currently carrying out a clinical trial to compare the natural trans fatty acids in dairy products with trans fatty acids of industrial origin. The trial participants are divided into three groups. In two groups the fat from food is replaced by alpine butter or special margarine (partially hydrogenated vegetable fats) with a similar level of trans fatty acids. The results are compared with those from a group consuming margarine with no trans fatty acids. Changes in blood vessel wall function and blood cholesterol level are measured after four weeks.

Food safety

In the core area of food safety, priority is given to prevention and the early detection of residues in food, water and the environment. A lot of clarification is necessary before a new agricultural plant protection agent is licensed. Risk mitigation measures are urgently needed if water organisms are endangered. Nowadays the Agroscope experts are better able to assess the concentration of plant protec-

tion agents in the aqueous environment, thus making an important contribution to environmental protection.

Several projects are also underway in microbiological food safety. Cheeses with a greatly raised level of biogenic amines often have aroma and curd defects. Such cheeses are sorted out at an early stage and do not get as far as the cheese counter. The likelihood of high biogenic amine levels in cheese varies considerably according to the type of cheese. The latest methods have been used to test Agroscope's range of cultures for the formation of biogenic amines, an important contribution to the food safety of Swiss cheese. The analytical methods are now being optimised further so that the contamination of suppliers' milk with unwanted bacteria can be traced and efficient practical advice made possible.

Food quality

A lot of research work is still needed for an objective determination of the nutritional quality, aroma, taste, texture and origin of Swiss food. For example, an apple's appearance constitutes an initial purchase criterion, but an appetising aroma can make up for an unfavourable first impression. Sensory analysts discovered this thanks to a new line of research. When breeding new varieties of apple this means that the right colour encourages people to pick the apple up, an appetising aroma makes a new apple variety popular.

For a lot more information on different research projects and the latest publications go to www.nutriscope.ch.



New methods for a competitive and sustainable plant production in Switzerland under deregulated market conditions

Inclusion of a new research topic

A new subject of research is to be incorporated in ProfiCrops: Win4. It is co-financed by the Federal Office of the Environment (FOEN). It will start in August 2010 with a preliminary study. The latter will examine the feasibility of a research project on the different aspects of the sustainability of crop production at plot, farm and collective farm level.

Consolidation of research subjects

Research subjects have been consolidated and the coordination of subjects allocated. ProfiCrops is currently composed of 9 themes (see table).

Expansion of the programme «Management Group»

The «Management Group» has been expanded with the aim of consolidating its strengths, enhancing its skill diversity and increasing synergies. It is composed by: Lukas Bertschinger (ACW, programme manager), Anna Crole-Rees (ACW, programme leader), David Dubois (ART), Robert Kaufmann (ART), Arnold Schori (ACW) and Markus Lötscher (FOEN, observer). The programme direction thanks the new members for their valued commitment.

Communication

The Agroscope research programme logo is now available. It allows for an improved positioning of these programmes and adds value to the contributions of researchers and programme managers about their progress and results, both internally and externally. Presentations have been made at various scientific and professional conferences and meetings.

All these elements focus on the goal of inter-disciplinary research, including researchers from the various Agroscope research stations and other research institutions and aim at making tangible contributions to maintaining socially, economically and environmentally sustainable Swiss crop production!

ProfiCrops will have a stand at Agroscope Changins-Wädenswil Research Station's Open House at Changins on 18, 19 and 20 June 2010.

You are all welcome!

Inter-disciplinary research: module		Topic specific research: integrated project	
Subject	Coordinators	Subject	Coordinators
Efficiency improvement	David Dubois and Gregor Albisser (ART)	Knowledge transfer: vegetable growing	Robert Baur (ACW), Thomas Wieland (Swiss Centre for Vegetable Growing)
Innovation and added value	Bernard Jeangros and Arnold Schori (ACW), Willy Kessler (ART)	Fire blight: prevention and management of fire blight	Eduard Holliger and Benno Graf (ACW)
Consumers	Anna Bozzi-Nosing and Christine Brugger (ACW)	ProfiVar: Swiss plant breeding, varietal testing and use of the results	Didier Pellet and Dario Fossati (ACW)
Framework conditions	Robert Kaufmann and Stefan Mann (ART)	Collective crop rotation: potentials	Andreas Keiser and Bruno Durgai (SHL-Zollikofen)
		ProfiViti: introduction of a new vine variety resistant to fungal diseases	Olivier Viret, Jean-Laurent Spring and Katia Gindro (ACW)
		Win4	To be determined



Cost optimisation in milk production

One of the main areas of activity on the part of Profi-Lait and its partners in the six winter months just passed was the «Cost optimisation in milk production» campaign. This campaign, supported by the Swiss Milk Producers, AGRIDEA, the Swiss Advisory Forum (BeratungsForum Schweiz, BFS) and Profi-Lait shows by way of example how, thanks to joint activities, Profi-Lait creates added value as a platform.

The core and starting point of the campaign was the fact that the individual milk producing farm is hardly able to determine its milk price and therefore its income, but is well able to influence the cost of milk production – and every franc saved on the cost side conversely means one more franc of income. In order to be able to reduce costs, you have to know what they are. Surprisingly, however, only a fraction of milk producers have at their disposal the data basis, let alone an appropriate farm accounting system, with which to calculate milk production costs. This is the campaign's starting point: any milk producers who have still not come to grips with their production costs will be prompted to reappraise the figures available in their accounts to the extent of being able to estimate their costs.

Calculation on the Internet

A simple cost calculation tool on the Internet makes it easy to get started in cost accounting and the impact will be reinforced by an accompanying broadly conceived campaign of information and advice. This will lay the foundation for effective cost management on the farm and hence also for the improvement of farm operating results. The «Cost Calculator» developed by AGRIDEA and in active use since December 2009 is available on the Internet (www.swissmilk.ch/kostenrechner).

Information and motivation

The Cost Calculator is intended as the first step in dealing with one's own figures. It is designed to «whet the appetite». Milk producers will also be provided with facts and figures on milk production costs at information events and through the specialist press. They will be encouraged to rise to the challenge of calculating their full costs and to attend the courses on full cost calculation being run throughout the country as part of the campaign. The Swiss Milk Producers are issuing cost credit vouchers for CHF 100.– as an incentive to attend these courses.

Conclusion

A great number of specialists from the institutions sponsoring the campaign as well as from cantonal advisory services and regional milk producers' associations are involved in the drive for «Cost optimisation in milk production». This collaboration and the closer relationship it fosters between the players in dairy industry research, education and consultancy are creating added value and acting as a model for other joint projects by the Profi-Lait partners.

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Feedback

Have you any questions, comments or suggestions regarding the Research Programmes? If so, please get in touch with the appropriate Contact Person.

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