

# Experience Creative Organics

Farmers' Innovations in  
Organic Farming

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# Farmers' innovations in organic farming

**Throughout the past eight decades, the role of organic farming in Austria has changed significantly. Farmers' expertise, knowledge and innovative ideas have played a crucial role in the success story of organics.**

What started off as a few organic pioneers' economic niche and courageous vision, has now become an important factor in the food markets and a key technology for the ecologisation of food production and sustainable use of resources.

The development of organic farming into a professional form of land use has been driven not as much by academic research as it has by the farmers' own practical knowledge and creativity. To this day, agricultural research is still to a large extent focussed on conventional agriculture.

## Ecological solutions to ecological problems

But organic farming differs in many ways from conventional farming. Organic farming means working in accordance with a set of ecological principles. Hence, organic farmers face specific problems and obstacles, which require well-adapted solutions.

This need for alternative solutions is illustrated by a wide range of examples. Doing without environmentally harmful chemical pesticides calls for the development of efficient mechanical and biological techniques for weed and pest regulation. With regard to animal husbandry, suitable housing is needed to comply with the requirements of animal welfare and ecology.

Organic farmers rise to these challenges and often take the development of appropriate solutions into their own hands, with creativity and innovative energy.

This brochure presents 14 case studies that have been selected out of a large pool of innovative projects. The case studies range from improvement and adjustment of production processes and machinery to development of new products and distribution channels.

Innovative organic farmers make an important contribution to solving agricultural and ecological problems. Furthermore, innovations in social and educational programmes show that organic farmers also take over social responsibility, well beyond mere adherence to ecological principles.

### What is an innovation?

The term can be defined as the planned, purposeful improvement and redesign of subareas, functional elements and behaviours within a framework of already existing functional relations. Innovations have the purpose of optimising present methods or adapting them to functional requirements that are new or have changed. They may include product innovations as well as innovations in methods and processes, i.e. new production methods and new ways of organisation and management.<sup>1</sup>

Innovations do not describe the creation of something entirely new that has never before existed. This is generally referred to as invention. Locally, developments are often considered innovations that are already firmly established elsewhere but bring about an important new approach in one particular region or organisation.

# The Ampfer-Wuzi – Rooting out the dock

**Broad-leaved dock wherever you care to look – the persistent taproot can easily become a serious problem. The Ampfer-(dock) Wuzi gives reason for hope.**

Broad-leaved dock (*Rumex obtusifolius*) feels at home on organic pastures. Unbothered by herbicides, the dock has become public weed number one. 60,000 highly persistent seeds per plant pose a real challenge to organic farmers. There are various preventive measures that help reduce dock abundance, but more often than not this inferior forage plant can only be removed by troublesome manual spudding.

Ferdinand Riesenhuber, an organic farmer from Upper Austria, found himself overwhelmed by broad-leaved dock on his meadows. Changing the fertilising strategy and frequent cutting left the insistent weed undeterred. The resourceful industrial engineer could not quite believe that there is nothing he could do but laboriously digging up every single root.

## At the root of the problem

And so in 1996, Riesenhuber developed the prototype of a self-propelled dock-tiller and named it *Wuzi*. As many farmers showed interest, the invention was followed by a smaller and cheaper version, the *Mini-Wuzi*, in 2003.

The driver sits comfortably in the cockpit. The spudding unit is mounted on a rail that is attached transversely to the direction of motion. The cutter head, carrying four sturdy hard-metal blades, is lowered hydraulically as the vehicle is driven over a dock plant, tilling out the plant down to a depth of 15 cm. The resulting heaps of earth should then be levelled and the vegetation gaps reseeded.

The *Mini-Wuzi* too is a self-propelled, hydrostatically driven machine, with the difference that the cutter head must be pushed down with the help of the operator's body weight.<sup>2</sup>



Picture: Ferdinand Riesenhuber

## Speed and precision

The success rate of 60% is comparable to (manual) spudding, but the output with the *Wuzis* is considerably higher: between 300<sup>3</sup> and 500<sup>4</sup> plants can be destroyed in an hour. "It's important to hit the underground stems precisely. If

you manage that, the success rate is very high"<sup>5</sup>, reports Riesenhuber from practical experience.

The Wuzi does not particularly like very wet ground, as the cutter head is prone to clogging up with mud. Wet conditions also favour the production of new dock shoots. To save costs, dock management should be started early, when the concentration of broad-leaved dock is not superior to 0.5 plants per square metre.<sup>6</sup>

The production and distribution of the Mini-Wuzi was taken over by an agricultural machinery company in Windischgarsten, Upper Austria. The small device has proven popular with individual farmers, but is also available as rental equipment.

Broad-leaved dock will continue to prosper on our grasslands. This time though, the Wuzi models give farmers a simple and efficient means to supplement preventive measures, so dock infestation does not get out of hand.

### Measures to control dock presence

On top of mechanical removal there is a variety of recommended measures for extensive dock control, such as:

#### Prevention

- Population monitoring / assessment
- Avoiding farming errors such as over-fertilising and over-grazing
- Closing gaps with dock-free seeds

#### Avoiding seed dispersal

- Grazing before the seeds are mature
- Removing the seed heads
- Mowing and removing the aftermath

#### Biological control

- Dock leaf beetle  
(*Gastrophysa viridula*)<sup>7</sup>

## Eco-Dyn soil cultivation – No tillage, good tillage?

**Is it possible to farm the land ecologically and, at the same time, save costs involved with tilling the soil? A growing number of organic farmers seem to think so and swear by the gentle, low-impact tillage methods offered by the Eco-Dyn universal cultivator.**

Weeds make it hard for the organic farmer to do without the plough. And, by loosening the soil, ploughing quickly leads to warming and mineralisation of the soil. Under the aspect of soil conservation, however, there are many arguments that speak in favour of leaving the plough in the shed. Using machinery that does not dig up the soil preserves the natural structure of soil layers, allowing in turn for increased activity by soil organisms.<sup>8</sup>

Manfred Wenz, an organic farmer from Schwanau in Baden-Württemberg (Germany), has a tale or two to tell about problems with the plough. In the 1970s, he was on the verge of desperation. "Ploughing to a depth of 20 cm and

rotavator seeding was modern then, but I was drowned in weeds”, he remembers. Today, he can calmly look back on 27 years of no-till farming.

Wenz looked for advice from other organic pioneers, and got it from Hans Kemink, who had been employing his ridge till system successfully in organic field vegetable growing. Manfred Wenz was the first to use a slightly adapted version of the device on a larger scale in arable farming.<sup>9</sup>

Inspired by experiences in Brazil and Australia, in 1997 Wenz and his son Friedrich built their own system, the Eco-Dyn universal cultivator. In Wenz’ opinion, soil cultivation is all about actively building up humus and soil life. Tillage is shallow with a depth of only about 4 to 6 cm, “a big change for a lot of farmers”, reports Wenz.<sup>10</sup>

### One piece of equipment – many ways of using it

The objective was to create one piece of equipment able to handle as many tasks as possible. The universal cultivator features a variety of removable devices to take care of the whole cultivation process, from stubble cultivation to sowing and weed control. The optional seed box serves for mulch and direct sowing.<sup>11</sup>



Picture: Franz Brunner

Practical experience and first study results confirm that cultivating the soil with the Eco-Dyn universal cultivator supports soil life and improves soil structure.<sup>12</sup> At the same time, this universally applicable piece of equipment can bring down costs and reduce the work input necessary for soil cultivation.

Patience, however, is required to reap the rewards of soil cultivation with Eco-Dyn. During conversion, yields may be lower and weed incidence higher, but there are reports from people who use it that, once conversion is achieved, there is hardly any need for manual weed control.

Eco-Dyn is distributed by Friedrich Wenz and his business partner Ulrich Schreier. In Austria, 20 such devices have been in use since last year.<sup>13</sup>

Considerable research remains to be done in minimal soil cultivation for organic farming. Still, the Eco-Dyn system already shows what may lie ahead.

#### Environmental relief potential of minimum soil cultivation

- Higher biological activity in depths of 0 to 10 cm because of higher organic mass.
- Higher resistance of the soil because of increased root penetration.
- Reduction of soil erosion and loss of water.
- Soil protection and humus build-up.<sup>14</sup>

# Organic catering is simple, healthy and delicious

ferences, healthy food is not readily available. Still, organics is an issue in mass catering. The organic meal is not necessarily more expensive than the conventional one.

Source: www.oekoandbau.de ©BLE, Bonn, Picture: Thomas Stephan



## Catering for the zeitgeist

Catering can be defined as the service of professionally supplying food and beverages.<sup>16</sup> The scale of the service can vary and ranges from party catering to catering at big events and the management of cafeterias, and may include only the food or also venue and staff.

Organic catering only uses products from organic farming. This offers significant advantages:

- No flavour enhancers, artificial colorants or preservatives
- Fresh and natural taste of valuable uncooked products
- Diversity – seasonal meals every week
- Portioned packaging for environment and budget
- Savings in time and effort
- Easy handling from ordering to consumption<sup>17</sup>

**Unhealthy dietary habits and obesity are a growing problem, especially with children and teenagers. Organic catering offers a convenient supply with healthy and balanced foods.**

Generating enthusiasm for healthy nutrition in children and teenagers is a challenging task that society should take seriously. People who prepare food for adolescents take over great responsibility. Healthy and enjoyable food is fundamental to health and well-being, and particularly so for young people growing up. Using exclusively organic products makes for an important base of food that is appropriate for children and teenagers, tastes good and is healthy.<sup>15</sup>

Organics, however, is not only the order of the day in schools and nurseries, but enjoys more and more popularity in the office too. Adequate nutrition drives enduring performance and stimulates mental and physical fitness of staff. But in many places, such as schools and of-

## “Sinn-volles“ organic catering and the Adamah organic farm

Mäggi Kokta from Waidendorf and the Adamah organic farm in Glinzendorf have been working together since 1998. What started off as cooking for the staff at the organic farm developed into the idea for a joint project: “Sinn-volles“ organic catering.

Whether it's in the farm kitchen or at an event venue, what is prepared is exclusively organic food, mostly from the Adamah organic farm. “Sinn-volles“ – literally “full of sense“ – organic catering intends to create buffets that appeal to all senses, warm and cold buffets, vegetarian and vegan dishes and delicacies. They specialise in catering for schools and nurseries as well as culinary supply at seminars, events and congresses.<sup>18</sup>

Organic catering meets the expectations of today's society in terms of health consciousness, flexibility and efficiency. This is what drives the success potential of this innovative marketing strategy.

## Organic products to your doorstep

**More and more Austrians buy organic food. Innovative systems of distribution like home delivery of organic products are convenient and meet consumers' individual requirements.**

Consumption of organic products has grown continuously for years. In Austria, it increased by 35 percent within three years, despite the fact that organic fresh produce is on average one third dearer.<sup>19</sup>

Austrian organic farmers are seeking new and innovative ways of distribution, with a view to accommodate the individual wishes of their growing number of customers and to acquire new client segments.

Central criteria for the success of marketing innovations are work and time efficiency in preparing meals on the consumers' side, a trustworthy source of organic produce, 100% assured organic quality, flexible delivery, adaptation to individual consumer requirements, a diversified and varied range of products as well as easy and convenient supply with organic products.



### ...bespoke, simple and reliable!

Organic box schemes are an innovative marketing and distribution channel that allows customers to obtain fruit, vegetables, milk and meat products directly from the organic farm. The organic farmers supply fresh organic produce in individually prepared boxes directly to the consumers' home. In so doing they supply regionally grown products without long transportation. Most organic box schemes cover a broad range of organic products, including fruit and vegetable boxes as well as specialty boxes like sheep cheese and ham boxes.



Picture: Anna Elmer/Traute Vogl

### A boxful of creativity

Achleitner organic farm in Eferding, farmed organically since 1990, has a broad range of different organic boxes on offer, including a special mother-child box, a box called vitamin kick, boxes of pure fruit or vegetables, a summer box, a snack box, or a box of various juices.

Besides fruit and vegetables, the farm also offers a full selection of organic products, personal and home care products as well as natural cosmetics, which can all be delivered within the box scheme. Frequency of delivery is up to the customer – weekly or fortnightly

– and the day of delivery depends on where the customer lives in the delivery area that stretches almost all over Upper Austria, western Lower Austria, and upper Styria, and continues to extend further and further.

Fresh organic fruit and vegetables are sold all year round. Produce that cannot be grown directly on Achleitner Farm, e. g. oranges and bananas, are sourced from cooperating organic farms or natural food wholesalers.<sup>20</sup>

The innovative organic box schemes assure the supply of local organic products for nutrition-conscious consumers.

Organic products mean wholesome food, in the production of which no chemical pesticides are applied. Organic storage vegetables, for example, have a longer shelf life and more taste. Organic meat is made from animals living in conditions appropriate for the species and raised without hormones and growth stimulants. And organic products are a 100% free of GMOs.<sup>21</sup>

# Innovative organic products

## Refreshingly different: Ice cream from goat milk

Goat milk does not only make delicious cheese. Peter Senftlechner from Ehrwald in the Tyrol provides the proof and uses part of his organic goat milk to produce his organic "Peter the Goatherd Ice Cream", which can also be enjoyed by people with cow milk allergy. The ice cream is sold together with other goat milk products in the farmer's shop.<sup>22</sup>

## Baa is the new moo: sheep and goat milk chocolate

Sheep farmer and businesswoman Gerlinde Hofer had an innovative idea for processing organic sheep and goat milk: she uses her sheep's milk to make the Chocolina organic sheep milk chocolate. Chocolisa, the organic goat milk choco-



late, uses milk from goats in the Traunviertel, Upper Austria.

In 2002, Gerlinde Hofer decided to create an alternative product to the normal chocolate made from cow milk. Master confectioner J. Georg Hochleitner assisted in the realisation of the idea. The product is now ready for marketing and already available in supermarkets.<sup>23</sup>

Source: www.oeskandbaude.de ©BLE Bonn, Picture: Thomas Stephan



### Goat milk

Goat milk provides a wide range of nutritional benefits:

- The protein structure (alpha-, beta-casein) of goat milk is fundamentally different from the protein structure of cow milk. Protein is very finely spread and the fat globules are smaller. This facilitates digestion.
- Goat milk has a higher content of calcium and phosphorus and contains additional trace elements.
- High contents in essential short chain fatty acids stimulate the metabolism.
- High content in vitamins A and D is of special importance to small children.<sup>25</sup>

### Plate diversity: vegetable and fruit rarities

More and more people long for more taste and more diversity in food. Particularly for organic farming, quality and hence taste are a vital asset. This is reflected not only by preserving existing varieties, but also by reviving old, often forgotten vegetable varieties.

Such rarities can be found on the Stekovics family farm. In cooperation with *Arche Noah*, more than 3,000 different varieties of tomatoes and many other vegetables such as peppers, chilli and cucumbers are cultivated and in part also processed. The family also sells young plants for growing in one's own garden. Distribution and marketing is directly from the farm or via internet.<sup>24</sup>

# The mobile henhouse

consequence is the destruction of the turf and the emergence of mud fields with rainfall. The animals too are exposed to a higher risk of infection due to greater presence of germs, which may in turn increase care efforts and costs.<sup>26</sup>

Source: www.oekolandbau.de ©BfL, Bonn, Picture: Dominic Menzler



**The most appropriate way to keep chickens is out in the open. This can, however, cause some ecological problems. The use of mobile housing can reduce the environmental damage done by happy hens.**

One of the basic principles of organic farming is that animals should be kept according to the needs of the species. Hence, keeping laying hens out in the open is a must for organic farmers that raise poultry. Being out in the open allows chickens to exercise characteristic behaviour such as running and flying, taking sun and dust baths, scratching the ground, and pecking.

Getting their hens out into the open, however, raises some ecological problems for organic farmers. Chickens prefer to stay close to their housing. The area immediately around that is therefore heavily used, creating environmental hazards caused by high and concentrated nutrient inputs that may have negative effects on soil and ground water. Yet another

Source: www.oekolandbau.de ©BfL, Bonn, Picture: Dominic Menzler



## Hens go travelling in the hen-mobile

To avoid such problems the idea of mobile hen housing came into existence. Max Weiland, an organic farmer from Nordhessen, Germany, named it the "hen-mobile".

The hen-mobile is a transportable hen house on wheels, which can be placed at will wherever chickens are allowed to roam freely. Damage to the turf is avoided by simply changing the location of the house before it can occur. Moving

the hen house is done with a few quick twists of the hand and only requires a towing vehicle. The hens can stay in their house during transport and are thus protected from being run over. The change in location makes sure hens always have a grass-covered area which provides important additional feed. This system also helps control parasites as it breaks their reproduction cycles.<sup>27</sup>



Source: www.ochelabau.de ©E.L. Bonn, Picture: Dominic Hemmer

At the same time, the hen house is equipped to meet the criteria of species-appropriate conditions and hygiene. At night, the chickens are protected from foxes and martens. There are recipients for food and water, and the droppings are collected by means of a belt, so the excrements can be used as organic fertiliser, an important source of nutrients.<sup>28</sup>

Max Weiland's hen mobile is an example for an ecological and innovative improvement in free-range hen housing which complies with the requirement of species-appropriate animal husbandry.

## A pig's paradise – The “sun pigs” of Burgau

**Smug in the mud, that's what pigs feel when they are out in the open. Still, in Austria hardly anyone keeps their pigs outdoors. A family from Styria shows that it is possible and indeed profitable to keep pigs outside all year.**

Organic farming principles require that animals be kept in circumstances as appropriate to the species as possible. In pig farming, allowing pigs access to a free-range area is compulsory, which leads to cost-intensive adaptation work on housing. Roaming free is more in tune with the pigs' nature than any other husbandry system, provided the area



Picture: Norbert Huck

presents a suitable structure with sheltering trees and bushes. While investments are considerably lower with free-range keeping than they are with indoor pig farming, there is an increased need for daily work input. Dedication and sound management are therefore required.<sup>29</sup>

Organic farmer Norbert Hackl's wish to implement a species-appropriate and natural way of keeping his pigs introduced some dramatic changes on the Hackl farm in the winter of 2003. The family converted to organic farming and were not afraid to try free-range pig keeping. And succeeded.



Picture: Mariene Hrabanek

### Out and about all year round

The Hackl family's pigs have 22 hectares of well-structured pastures at their disposal, with trees, bushes and water. "The natural environment gives the animals an added sense of peace and security", assures Hackl. They can retreat into holes in the ground that were dug out of the hills specifically. These ground holes provide protection against temperature extremes, a function normally fulfilled by the pigsty – or by huts, which are more regularly employed in free-range husbandry.

Duroc and Swabian-Hall are sturdy breeds that can cope with temperatures

below zero Celsius in winter, and boast a skin colour that protects them relatively well against intense sun in the summer.

The animals are kept in a big group, which positively affects the social fabric among the pigs. There are hardly any conflicts and the group hierarchy is accepted by all the animals. A boar is always kept in the group in order to guarantee constant reproduction. The group consists of 20 breeding pigs, 200 fattening pigs and one breeding boar.<sup>30</sup>

### Only top-quality organic feed

Burgauer Sonnenschweine, the "sun pigs of Burgau", are fed only high-quality organic feeding stuff, including cereals, peas, fodder beet and topinambur (Jerusalem artichoke). In summer, the animals are allowed to harvest their own food on the surrounding fields. This saves costs for bringing in and storing forage.

The meat is marketed directly, and Hackl organic farm has won several awards with its products. At the moment, an exclusive organic marketing channel is being developed in cooperation with the regional restaurant industry.<sup>31</sup>

The "sun pigs" show that indoor keeping is not the be-all and end-all in pig farming. Provided they are well managed and combined with professional direct-marketing campaigns, free-range models that are both near-natural and species-appropriate make both ecological and economical sense.

## Natural behaviour of pigs

*Did you know that pigs...*

*...naturally live in groups of up to 20 animals?* The group has a stable hierarchy, established primarily according to weight and age of the animals.

*...being omnivores, they spend the best part of the day exploring and foraging?* With their snout, they grub up tubers, roots and small animals.

*...cannot sweat?* That is why they enjoy wallowing in the mud to refresh and keep off ectoparasites.

*...are very clean animals?* They have their proper places for excrements (in contrast to e.g. cows and hens), the feeding and sleeping areas are kept clean. Excrements and urine also serve to mark their territory.

*...sleep in a nest?* Also before giving birth, the pregnant sow builds a nest.<sup>32</sup>

## No more creepy-crawlies

**Colorado potato beetles can cause massive damage to plants on a potato field, which in turn can lead to significant economic loss. With the help of innovative equipment, these bugs can be removed.**

Identifying as early as possible the threat posed by a beetle population is vital, and even more so in organic farming. Since pest control with the help of insecticides is against organic principles, preventive measures such as the right crop rotation assume an important role in organic farming. Potatoes should not be grown on the same piece of land within three years of the last potato crop.

Source: www.oekolandbau.de ©BLE, Bonn, Picture: Thomas Stephan



Jürgen Feigl, an organic farmer in Lower Austria, has another way of fighting the Colorado potato beetle: he grows coriander right beside his potatoes. The smell of the herb keeps the beetles away.<sup>33</sup>

It is, however, not always possible to prevent a Colorado potato beetle infestation. If it happens, it is essential to act quickly in order to save the harvest, but manual collection of the beetles is enormously labour-intensive. Innovative equipment for collecting and sucking in Colorado potato beetles are new, fast ways of getting rid of the bugs.



Source: www.oekolandbau.de ©BLE, Bonn, Picture: Dominic Mender

### Pick or suck – gentle but efficient

Organic farmer Walter Kress from Hardthausen am Kocher, Baden-Württemberg, Germany, has developed an instrument for picking Colorado potato beetles. The device touches the plant, which causes the beetles and their larvae to fall off, and catches them in small metal recipients.<sup>34</sup>

A similar instrument, the “Bio-Collector”, distributed by the company Bio-Landtechnik in Franken, Germany, employs suction to achieve the required results. It blows the Colorado potato beetles and their larvae off the plants and sucks them into collecting devices, which

can later be removed to dispose of the bugs.

The advantages of such a device are obvious. It works efficiently and can free a hectare of potato plantations from beetles in one hour. With a robust, user-friendly design, it is easily assembled and adjustable to various field conditions. Experience shows that large quantities of beetles can be collected, and larvae are caught efficiently too.<sup>35</sup>

In Austria, the “Bio-Collector” is already used in some places and provides the organic farmers with a gentle but efficient method of keeping their potato plants healthy and to assure their harvest.



### Colorado potato beetle

The Colorado (potato) beetle (*Leptinotarsa decemlineata*) is one of the most famous and important beetles in agriculture. The beetle was brought into Europe from North America and has spread since the 19th century. The Colorado beetle, as well as its larvae, feed on the leaves of the potato plant. They can, however, also cause serious damage to other solanaceous plants, such as tomatoes. By eating up its aerial parts, the beetle destroys the plant in its entirety.<sup>36</sup>

Source: www.wikipedia © Agricultural Research Service USDA, Picture: Scott Bauer



# Organic farmers employ four-legged mowers

**Christmas-tree plantations are often very intensive cultures that rely on the use of herbicides. Organic farmers have found their own way – with sheep.**

The biggest challenge in Christmas tree growing is grass control. When grass gets too high, growth of the lower tree branches may be inhibited by shade. These turn ugly, and the tree cannot be harvested until several years later.

Moreover, grass and weed roots compete with the tree's roots and thus weaken the growth of the trees. In conventional plantations it is therefore common practice to keep the spaces between the trees free from grass and weed with the help of herbicides. This ensures that the Christmas trees can be cut early.

Environmentally-conscious organic Christmas tree farmers are aware of the ecological problems caused by herbicides and do not use them. This, however, leads to an enormous need of manual labour. Young plantations must be mowed three to four times to control weeds and grass.<sup>37</sup>

## Lambs do the mowing

While looking for alternative production processes that are at the same time labour-efficient and ecological, some organic Christmas tree producers chose a new, innovative way: it is not herbicides that do away with the grass, it is lambs!

Robust English Shropshire lambs graze the spaces between the trees and keep the grass short. It was almost by accident that New Zealanders discovered that this breed does not peel bark or browse on trees. Of over 800 sheep breeds in the world, only the Shropshire can be used successfully in Christmas tree plantations.<sup>38</sup>

A positive side effect of sheep grazing is that it allows a thick turf to grow, which keeps away weeds. Shropshire sheep are also effective against mice that attack the roots of young trees, thus inhibiting their growth; they are expelled because the sheep destroy their holes.<sup>39</sup>

## Keeping “Mowers” is easy

Ferdinand Linsbold, who has been growing organic Christmas trees for about ten years, stresses that keeping lambs is cheap and not complicated at all. “There is no need for concentrated feed or other supplementary feed, with the exception of an appropriate mineral supplement for lambs. They do not necessarily need a stable, but a simple housing to protect them from heat is advisable.”

Far from being only lawn mowers, mouse expellers and turf tenders, lambs provide Christmas tree growers with an additional economic option: if the lambs are kept well, they reach their ideal slaughter

weight in autumn. Proceeds from the sale of their meat may represent an important additional income for the farm. Because lambs are not kept over the winter, there is no need for a winter stable or winter feed. In the following year, either new lambs are bought or they are bred on the farm if it owns breeding animals.<sup>40</sup>

In this way, organic Christmas tree growers have managed to overcome the trade-off between labour, income maintenance, and ecological responsibility.



# Social, educational, eco-logical

and integration with natural cycles, combined with assuming responsibility for plants and animals, creates great potential for social work on organic farms.

## New opportunities: young people with integration problems on an organic farm

One example of a social innovation on an organic farm is the Michaelihof farm in Pongau, Styria. Over ten years ago, Franz Prenner added a social component to his organic farm by starting individual, social-pedagogical care of young people with integration problems.

The teenagers living in the farm community had the chance to break out of their familiar, often difficult surroundings and to acquire a positive idea of themselves and their work in the Michaelihof community.

**Some organic farms not only emphasise ecologically sound production and the protection of natural resources, but also provide invaluable services to the community.**

Through innovative educational and social projects, organic farmers have developed ways not only of producing food, raw materials and ecological services, but also providing society with access to their knowledge and life.

Projects targeted at the integration of people with special needs are occupying a special place in this context. Workshops for the disabled and the elderly, projects with people with mental disorders, projects with people addicted to drugs as well as social-pedagogical work with young people with integration difficulties, all leverage the therapeutic potential of agriculture.<sup>41</sup>

Organic farms are exceptionally well suited for this type of social project, due to their diversity and extreme closeness to nature. The participant's experience of



Picture: Marlene Hrabanek

Individual supervision lasted from two to four years and was a success for Franz Prenner. More recently, Michaelihof has started offering support lasting only from a few hours to a few days, for individuals or groups. Focus is on group experience, group dynamics and social cooperation.

Care and support is centred on therapeutic work with nine horses. These are used

for rides that can take from a day up to a week. Additionally, teenagers work with plants and animals, feed them and look after them and clean their stables, which all are activities that increase the effects of social-pedagogical work.

Work on Michaelihof gives the youths a better understanding of their own limits. They experience what it feels like to be valued by others, learn how to assume responsibility and find ways of re-establishing their inner balance.<sup>42</sup>

### **Green Angel project Getting back into work**

The Green Angel project represents another social innovation in a different field: from 2000 to 2005, Anna and Reinhard Engelhart, in co-operation with the *Psychosoziales Zentrum Schiltern*, led a support project for people who emerged from psychological crisis.

Work on the farm facilitated the process of getting back into the labour market. The Engelhart family developed new lines of production in which for 15 months, groups of up to six people worked and were able to recover a sense of fulfilment. Work was varied and required different skills, including cultivating and cutting asparagus, producing ready-to-eat vegetable dishes or selling produce in the farm shop. Demand for the programme was high. Between 70 and 80% of the people who had taken part in the programme found a new job, a clear indication of the enormous success of the project.

Two years ago, the Engelhart family were forced to stop the project on their farm. More personal resources were required

than they could provide, and the financial situation did not allow for additional personnel to be hired. They returned the project to the *Psychosoziales Zentrum Schiltern*, where it is continued in a similar form.<sup>43</sup>

### **Teaching the organic way**

**For children, spending time on a farm is an exciting experience, and even more so if they have the chance to get into close contact with the farm and everything that comes with it.**

“Schule am Biobauernhof”, school on organic farms, is an education project for children in which organic farmers make an important contribution to a “sustainable education for sustainability”. These projects are all about dissemination of information and values, with the objective of creating consciousness of nature, environment and agriculture. A one-day excursion or a project week gives children insight into topics such as the origins and the processing of our food, the significance of farms for our diet, life and work on a farm, sustainable use of resources, and the ecosystems on and around a farm.

Children learn about these topics in a variety of ways. They get to see first-hand the way milk flows, from the cow on to butter. They grind cereals and bake their own bread. They feed animals and learn how to cure little aches and pains with medicinal plants. They plant trees, harvest potatoes and make apple juice. This way, the children gain realistic insights into the life on an organic farm. Apart from farm work, there is always room for fun and games.

## Appre-handing nature

One example of a farm with a long experience in this field is the Vögeihof farm in Forstau, Salzburg. Pioneering educational programmes on organic farms, the Ortner family had to put a lot of creativity, intuition and willingness to learn into their idea to make it work. Today, Vögeihof has been teaching “school on an organic farm” for over 21 years, providing hands-on learning opportunities tailored to different age groups ranging from 9 to 16.

The objective is to teach children, as tomorrow’s consumers and decision makers, possible ways of reconciling ecology and economy, thereby stressing the importance for children to get to see, feel and taste organic farming in all its authenticity. “The children see that

we actually live by what we tell them.” And these efforts are well rewarded: over 60,000 children have already spent time on Vögeihof.<sup>44, 45</sup>

Social and educational projects in farming open up new perspectives, both for farmers who amplify and diversify their activities, and for society which benefits from these initiatives. Dedicated and motivated organic farmers have an important pioneering role to play in a field that surely offers yet more room for innovative ideas.



# Weed power

**Discussions on climate change and renewable energy sources are more heated than ever. An organic farmer from Upper Austria has championed the use of alternative energy sources for years.**

Sustainability means creating and maintaining the foundations that satisfy the needs of current and future generations. Consequently, today's climatic conditions and the limited availability of fossil fuels call for a more extensive use of environmentally-friendly energies.

The combustion of fossil fuels, e. g. petrol and coal, releases carbon dioxide into the atmosphere, which has an important impact on the greenhouse effect. Nonetheless, 85% of our energy is sourced from fossil fuels.<sup>46</sup>

Developing technologies for renewable energy sources in homes, transport and industry builds an important base for a change towards sustainability. An Aus-



Source: www.ochslandbau.de © H. E. Bonn, Picture: Dominic Alenker

trian organic farmer's machinery may be an important contribution to the use of sustainable energy in agriculture.

## Weed seeds feed the tractor

One of organic farmer Josef Malzer's many innovations reduces fossil fuel combustion in agriculture. Malzer's tractor extracts its fuel from weed seeds while being driven. The vegetable oil squeezed from the seeds is pre-filtered, pumped into an extra tank and from there past the fuel filter into the engine. "On my farm, weeds are turned into herbal energy", says Josef Malzer about his innovative tractor oil mill.

The tractor oil mill is but one of Josef Malzer's innovative ideas. In 1995, he received the Upper Austria Environmental Protection Award for his wood carburetor. The "biomass reactor" combines wood, grass, organic waste or energy grain to produce a valuable mixed gas, which is used for the operation of stationary engines.<sup>47</sup>

To Josef Malzer, it is of utmost importance to pass on his expertise about renewable energy sources. He offers "reconstruction seminars" in which he teaches how to convert a normal car into a vegetable-oil-driven car. Moreover, he regularly organizes energy roundtable discussions, in which he and renowned scientists speak about the topic.<sup>48</sup>

"The climate catastrophe will spare us because we will change five minutes before it's too late"<sup>49</sup>, Malzer is convinced. In order to at least slow down climate change, a change in energy use is inevitable, and innovations such as Malzer's provide its footing.

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