Low Input dairy farming in Austria – Experiences from training courses and results of participating farmers

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Dairy farming strategies

- **High input, high output per cow**
  - Indoor housing
  - Intensiv rations
    - Concentrate, Corn, TMR
  - Milk yield > 10,000 kg/cow

- **Medium input – medium output per cow**
  - Concentrate + forage feeding systems
    - > 8,000 kg Milk/cow

- **Low input, low output per cow**
  - Forage + concentrate feeding systems
    - 6,000 – 8,000 kg milk/cow
  - Grazing systems
  - Up to 90% pasture
  - Low concentrate
  - 4,000 – 6,500 kg milk/cow
  - Milk per ha grassland > 10,000 kg

**Focus of training courses**

- Different gradations

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Andreas Steinwidder / Organic Low-Input Dairy Farming
Low-Input goals

Minimization of

- external input (concentrate, energy, …)
- costs for machines
- conserved feed stuffs
- workload

High amounts of

- fresh forage in rations and high amounts of
- milk yield per ha grassland area

→ But: high milk yields per cow not possible

Goals Low-Input-Strategy (Low-Cost)
„To produce products high in quality with low costs“

Goals High-Input-Strategy (High-Output):
“To distribute the relatively high costs on as much product as possible“
Compared to other grassland regions we have **special low input challenges** in Austria:

- short growing period
- expensive stables
- small farms with management disadvantages
- higher production costs
- cattle breeding and livestock export important
- grazing (was) declining

**but also supportive**

- high share of organic farms
- financial support for grazing
- premium milk programs in some regions

**Low-Input strategy:**

- technical and economic constraints
- lack of information
Training courses for farmers

in German: “Low-Input Praktiker-Ausbildung” since 2015

- The transfer and exchange of knowledge and experience between farmers, advisors and researchers was the main goal of the training courses.

- The researchers and advisors stimulated active learning with discussions and the training course partners worked on integrated management solutions in the fields of feeding, housing, breeding, grassland management and economics.

- The participating farmers were given no strict guidelines regarding the speed and intensity of implementation of the low-input strategy.

- All farmers collected basic production and economic data according to the methodology of the Austrian dairy cattle network (Arbeitskreis Milchproduktion).

2015 - 2017: 160 participants
Training courses for farmers

*in German: “Low-Input Praktiker-Ausbildung”*

Each course included 4 “two-day modules” were different topics were discussed indoors and additionally on low-input pilot farms

- feeding – breeding
- animal housing – welfare
- grassland management – grazing
- economics – socio-economics

After each meeting consultants supervised further “regional small group meetings” (“stable schools”) on different project farms
Grassland based organic low-input dairy production

- goals and training priorities

Milk production predominantly from forage and pasture

Low Input

Minimization of imported feedstuffs, energy, machinery, fertilizer, medicine…

Inexpensive stables with high animal comfort

Cows with high forage-lifetime-performance

High forage-area production level and good hourly wage

Inexpensive stables with high animal comfort

Minimization of imported feedstuffs, energy, machinery, fertilizer, medicine…

Cows with high forage-lifetime-performance

High forage-area production level and good hourly wage

Forage

Grassland

Pasture

Soil

Breeding

Feeding

Care of livestock

Livestock housing

Farm concepts

Alternatives

Farm management

Andreas Steinwidder

Organic Low-Input Dairy Farming
Current economic evaluation results - Particularly important **key factors for the economic success**

Table: Key **management and production factors** (N=81, 2017: Organic Low Input farms)

Comparison of the better and weaker quartiles as well as average - ranked according to the economic results

<table>
<thead>
<tr>
<th>Factor</th>
<th>+25 %</th>
<th>average</th>
<th>-25 %</th>
<th>%-Difference +25 zu -25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms (cows/farm), N</td>
<td>20 (28)</td>
<td>81 (24)</td>
<td>20 (23)</td>
<td></td>
</tr>
<tr>
<td>Marginal income, Euro/cow</td>
<td>2,819</td>
<td>2,215</td>
<td>1,613</td>
<td>175</td>
</tr>
<tr>
<td>Marginal income, Cent/kg milk</td>
<td>43.9</td>
<td>38.3</td>
<td>32.7</td>
<td>134</td>
</tr>
<tr>
<td>ECM-milk yield from forage, kg/cow a. y.</td>
<td>5,481</td>
<td>4,794</td>
<td>4,092</td>
<td>134</td>
</tr>
<tr>
<td>Milk from concentrate, kg Conc./kg milk</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>100</td>
</tr>
<tr>
<td>Milk yield per cow, kg/year</td>
<td>6,434</td>
<td>5,788</td>
<td>5,021</td>
<td>128</td>
</tr>
<tr>
<td>Replaced cows/year, %</td>
<td>19</td>
<td>24</td>
<td>26</td>
<td>73</td>
</tr>
<tr>
<td>Livetime-performance/cow, kg milk</td>
<td>26,678</td>
<td>28,525</td>
<td>22,211</td>
<td>120</td>
</tr>
<tr>
<td>Bacterial milk quality count, in 1,000</td>
<td>10</td>
<td>12</td>
<td>13</td>
<td>77</td>
</tr>
<tr>
<td>Somatic milk cell count, in 1,000</td>
<td>128</td>
<td>137</td>
<td>141</td>
<td>91</td>
</tr>
<tr>
<td>Milk fat content, %</td>
<td>4.11</td>
<td>4.06</td>
<td>4.02</td>
<td>102</td>
</tr>
<tr>
<td>Milk protein content, %</td>
<td>3.40</td>
<td>3.31</td>
<td>3.23</td>
<td>105</td>
</tr>
</tbody>
</table>
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Results

The results show that the following aspects are particularly important key factors for the economic success of the low-input strategy:

1) High forage quality during lactation, high forage milk yield, feed cost reduction
   → soil and grassland management
   → grassing and feeding management
   → efficient concentrate input,
2) Breeding strategies for low-input adapted and fertile cows
3) High milk quality and also sufficient milk yield per cow
4) Possibility to market the milk within premium programs

100 % of farmers rated the low-input training courses as “very good” or “good”:

Especially the
✓ intensive exchange of practical experience between the training course partners
✓ and the discussions with the visited low input pilot farmers were appreciated
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Conclusions

✓ Optimal and site-adjusted low-input strategies offer a basis for a sustainable organic dairying in Austria.

✓ The courses – based on research results, practical experiences and intensive exchange - were powerful tools for agricultural development and knowledge transfer.

Thanks for your attention!

Further Information: www.raumberg-gumpenstein.at/bio-institut