Could organic and conventional hill dairy farms reach a food self-sufficiency after unsuitable climatic years?

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Aim of the study

to valuate the sensitivity of farms to climatic accidents

- organic and conventional farms
- hill dairy farms
- grassland farming system

the fodder self-sufficiency as indicator

several climatic accidents since the 2003 drought
Material & methods (I)

8 farms surveyed (4 conventional & 4 organic)

- similar soil and climate conditions
- farms surveyed since 2000
- organic farms in organic production since 1998

Material & methods (II)

farms localisation
Material & methods (III)

characteristics of the two groups of farms

<table>
<thead>
<tr>
<th></th>
<th>Organic farms</th>
<th>Conventional farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useable farm area (ha)</td>
<td>53,1</td>
<td>59,3</td>
</tr>
<tr>
<td>% of grassland</td>
<td>88</td>
<td>87</td>
</tr>
<tr>
<td>% of crops</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Stocking rate (LU ha(^{-1}))</td>
<td>1,03</td>
<td>1,19</td>
</tr>
<tr>
<td>Dairy cow LU(^{-1}) (%)</td>
<td>66</td>
<td>53</td>
</tr>
<tr>
<td>Milk per cow (L)</td>
<td>5 160</td>
<td>6 300</td>
</tr>
<tr>
<td>Milk per fodder area (L/ha)</td>
<td>3 500</td>
<td>4 500</td>
</tr>
</tbody>
</table>

Material & methods (IV)

technical and economic data collected each year

- 3 or 4 visits per year
- to registrate farm operations concerning:
  - livestock management
  - field management
  - farm accounts
Results (I)

Evolution of the fodder self-sufficiency

Results (II)

Conventional farms have developed strategies to adapt their fodder need to the resources:

- Intensification of the milk production
- Increase in the area of fodder maize
- Stop of fattening unit
- Stop of fodder selling
Results (III)

For the organic farms, only one of the conventional strategies can be developed:

- intensification of the milk production

Organic farms have less opportunities than conventional farms

- and they did not try to cultivate other forage crops

Results (IV)

fodder and concentrate self-sufficiency

![Graph showing self-sufficiency from 2000 to 2006 for different categories: concentrates, fodder, concentrates, and fodder.]
Results (V)

Existence and evolution of fodder supplies

![Graph showing comparison between conventional and organic farms over time.](image)

### Conclusion

Organic farms are more sensitive when climatic accidents occur

Organic farms have less possibilities to develop alternative strategies

Wich change in organic farming systems?