The impact of horses on farm sustainability in different French grasslands regions

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Context: Horse productions in France

- 1 million of horses (REFE, 2011)
  - 60% are located in agricultural structures (Perret et al, 2013)

Sustainable issues of grassland areas:
Maintenance of a workforce in rural zones, based on a viable agricultural economy while preserving their environmental resources.

In these areas mainly used by cattle farming, alternative productions are limited. Therefore horse farming can provide opportunities with the development of riding.

Research question:
Impact of horse productions (alone or associated with other productions) on farm sustainability in grassland areas
Method:

- Farm survey in 4 grassland areas:
  - 2 Lowlands: Basse-Normandie, Centre
  - 2 Uplands: Franche-Comté, Auvergne

Saddle horse

Draught horse
Method: Survey

- 20 to 26 farms per area:
  - More than 3 mares
  - Professional status: > 1 WU
  - A farming system representative of each area:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Lowlands</th>
<th>Uplands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse productions</td>
<td>Saddle horses</td>
<td>Draught horses</td>
</tr>
<tr>
<td>Area</td>
<td>Basse-Normandie</td>
<td>Centre</td>
</tr>
<tr>
<td>Farming system</td>
<td>horses specialized</td>
<td>horses + beef cattle</td>
</tr>
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<td>horses + dairy cattle</td>
</tr>
</tbody>
</table>
Method: data gathering

• Similar questions in each area:
  – Farm structure:
    • Landuse,
    • Workforce,
    • Economic results...
  – Aim, history, management and development of each production
    specially on horse productions
Method: Sustainability criteria

- **Environment**: grazed grasslands (ha)
- **Social**: workforce (WU)
- **Economic**: Gross output (k€)

Impact of horse productions expressed as percentage of the farm total

- % grassland grazed by horses
- % horses in the total livestock
- % work devoted to horses
- % horse productions in the gross output
Results: Draught horse farming in Uplands

- Main farms features

<table>
<thead>
<tr>
<th></th>
<th>Auvergne</th>
<th>Franche-Comté</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>horses + beef cattle</td>
<td>horses + dairy cattle</td>
</tr>
<tr>
<td>Farm number</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Agricultural area average (ha)</td>
<td>127</td>
<td>128</td>
</tr>
<tr>
<td>permanent grassland (% total area)</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>total output average (k€) *estimation</td>
<td>107</td>
<td>175</td>
</tr>
<tr>
<td>total labour force average (WU)</td>
<td>1.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Rate of horse livestock on total livestock (%)</td>
<td>10</td>
<td>13</td>
</tr>
</tbody>
</table>
**Results: Draught horses farming in Uplands**

- **Horses and sustainability criteria**

  **Auvergne** (25 farms)

  100 %

  grassland grazed by horses

  • Horses grazed paddocks grazed by cattle
    – At the same time than beef cattle and heifers and after a dairy cows grazing

  • Horses grazed paddocks unusable by cattle
    – because they are small, far or of poor feed value

  The main production was the sale of foals just after weaning.
  Horses remained on grasslands all around the year.

  10 %

  horses in the total livestock

  5 %

  work devoted to horses

  5 %

  horse productions in the total output
Results: **Draught horse farming in Uplands**

- **Horses and sustainability criteria**

  **Franche-Comté** (26 farms)

  100 %

  - Grassland grazed by horses

  12 %

  - Horses in the total livestock

  14 %

  - Work devoted to horses

  2 %

  - Work devoted to horses

  14 %

  - Horse productions in the total income

  **Work devoted to horses was relatively more important, because:**

  1) Some farmers housed horses in stable during winter

  2) Other farmers trained young horses for draught work
Results: Saddle horse farming in Lowlands

- Main farm features

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<td></td>
<td>horses specialized</td>
<td>horses + beef cattle</td>
</tr>
<tr>
<td>Farm number</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Agricultural area average (ha)</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>Permanent grassland (% total area)</td>
<td>90</td>
<td>83</td>
</tr>
<tr>
<td>Rate of horse livestock on total livestock (%)</td>
<td>98</td>
<td>46</td>
</tr>
</tbody>
</table>
Results: Saddle horses in Lowlands

- Horses and sustainability criteria in mixed systems

Basse-Normandie

- Horses
- Beef cattle

% Livestock: 46%
% Grazed pasture: 91%
% Output: 52%
% Work: 58%
Results: Saddle horses in Lowlands

- Horses and cattle sustainability criteria in mixed systems

Basse-Normandie

![Graph showing the relationship between livestock and work productivity in mixed systems.](image-url)
Results: Saddle horses in Lowlands

- Horses and cattle sustainability criteria in mixed systems

Basse-Normandie

- Horses
- Beef cattle

Centre

- Horses
- Beef cattle

Saddle horses compared with cattle
- grazed larger grasslands areas
- needed a more important work
- brought an output:
  - < dairy cattle
  - = beef cattle
Results: Saddle horses in Lowlands

- Diversity of saddle horse activities in farms.

<table>
<thead>
<tr>
<th>Marketing of young horses (% of the farms number)</th>
<th>Basse-Normandie</th>
<th>Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms number</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>before breaking-in</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>between 3 and 6 years of age</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>after 6 years of age</td>
<td>60</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Services (% of the farms number)</th>
<th>Basse-Normandie</th>
<th>Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farms number</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Livery boarding</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Reproduction centre</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>Training centre</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Horses specialized</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Horses and beef cattle</td>
<td>67</td>
<td>29</td>
</tr>
<tr>
<td>Horses and dairy cattle</td>
<td>33</td>
<td>14</td>
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<tr>
<td>Horses and beef cattle</td>
<td>33</td>
<td>22</td>
</tr>
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</table>
Conclusions:

Sustainable impacts of horse in grasslands

The environmental impact

• Horse farming contributes to a better maintenance of grasslands:
  – Horses graze areas than cattle could not use
  – Horses graze during longer periods than cattle
  – Horses graze grasses than cattle do not graze

• Horse breeding contributes to the biodiversity maintenance in animal species
  – In France, horses represent only 4% of the herbivorous livestock
  – In particular, the French draught horse breeds are endangered

The social impact

• All inquired farmers raised horses because they love them
  – So that some draught horses breeders tend to regard this activity as a hobby

• Saddle horse farming needs work and provides services around
  So that specialized horse farms operate increasingly as small developmental poles in rural zones
Conclusions:

- These results from representative farms must be combined with national data bases to quantify the sustainable impacts of horse husbandry in French grasslands.
Aknowledgements

- Members of the economic network of Basse-Normandie, Auvergne-Limousin and Franche-Comté
- Associations of horse breeders of the 4 régions