Evaluating inputs for organic farming – a new system

Case study: Hydrolysed proteins

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13 October 2005

Archived at http://orgprints.org/00006078/
Overview

• Objective and method
• Hydrolysed protein matrix
• Key issues evaluators
• Discussion of key issues
• Conclusions
Objective and Method

Objective:
- Find out whether the matrix works
- Provide an example for real applicants

Method:
- One applicant representing a member state
- 3 experts representing the expert panel

Only first phase of an evaluation process!
Matrix: Application form

- **Name:** Hydrolysed proteins of animal origin
- **Composition:** Amino acids, peptides, polypeptides, denaturated proteins.
- **Nutrients:** HyPro contain 5 - 10 % N (mainly as organic N). In addition, they contain 2 - 8 % Ca.
- **Quality:** The composition of HyPro as a category varies widely with different materials of origin and with different hydrolysis processes.
- **Form:** Fluid or solid.
- **Use:** Fertiliser, biostimulants and complexing agents.
Matrix: Application form

• Approval in EU: At present hydrolysed proteins are approved for use in conventional agriculture in Italy (according to the Law 1984/748) and Spain.

• Crops: Horticulture (vegetables & fruit trees), winter cereals.

• Application method:
  – to the soil, by fertigation, when utilised for their fertilising properties;
  – to plants, by spray application, when utilised for their biostimulating or complexing properties.

• Dosage and application rate (empirical figures from Italy):
  – Fertigation, horticulture: 2 - 12 kg N/ha/cropping cycle;
  – Fertigation, fruit trees: 5 - 20 kg N/ha/year;
  – Spray application: 0,5 - 1 kg N/ha/application.
Matrix: Application form

### Key issues in favour
- Precedents with similar raw materials.
- Recycling of waste material.
- Traditional use in Italy and Spain.
- Necessary for some crops.

### Key issues causing concern
- Origin of parts of the animals from factory farming cannot be excluded.
- Not all manufacturing methods equally compliant
Key issues evaluators

Key issues in favour

- Alternatives and necessity

Key issues causing concern

- Factory farming: origin of material
- Manufacturing
- Effect of impurities: Cr residues
- Public perception
# E 4.02-3 Alternatives

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Evaluator</th>
<th>Score</th>
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</thead>
</table>
| (1) HyPro provide N quickly to ensure good crop performance.  
(2) HyPro are also used for their capability to enhance soil microorganisms.  
(3) HyPro are also used in association with other fertilisers. | For some purposes, HyPro could be replaced by other products such as blood meal or melasses, but not for other purposes. There are no other permitted N fertilizers with comparable properties. | +1 or +2 |
### E 2.01 Origin of materials

<table>
<thead>
<tr>
<th>Applicant</th>
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<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>HyPro are produced from:</td>
<td>wastes of animal origin</td>
<td>0</td>
</tr>
<tr>
<td>(1) Slaughterhouse residues (i.e. meat, blood or fish meal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Tannery residues.</td>
<td></td>
<td></td>
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<tr>
<td>(3) Other residues (i.e. ground feather, waste wool)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
E 2.03 Factory farming origin

<table>
<thead>
<tr>
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<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin of parts of the animals from factory farming cannot be excluded.</td>
<td>Factory farming origin cannot be excluded for part of the material.</td>
<td>-1</td>
</tr>
</tbody>
</table>
E 3.01 Manufacturing methods

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Evaluator</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Thermal hydrolysis:</td>
<td>Chemical hydrolysis should only be used exceptionally. In the presence of</td>
<td>A=0; B=-1; C=-2</td>
</tr>
<tr>
<td>B) Enzymatic hydrolysis</td>
<td>two other methods, there seems little need to allow chemical hydrolysis.</td>
<td></td>
</tr>
<tr>
<td>C) Chemical hydrolysis</td>
<td></td>
<td></td>
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</tbody>
</table>
## E 5.03 Effects of impurities

<table>
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<tr>
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</thead>
</table>
| A) For products of most origins: no significant effects expected.  
B) For products from post-tanning residues: some release of Cr (within legal tolerances in Italy). | A) Most HyPro: no concerns  
B) HyPro derived from post-tanning wastes constitute an avoidable source of Cr pollution (avoidable because other raw materials are available). | A=0;  
B= -1 or -2 |
### E 8.01 Public perception

Consumption-related views.

<table>
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<tr>
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</tr>
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<tbody>
<tr>
<td>A) Supply of high quality products.</td>
<td>A) Some concerns over BSE risks (whether or not scientifically justified).</td>
<td>-1 to -2</td>
</tr>
<tr>
<td>B) BSE worries</td>
<td>B) Worries of vegetarians about the &quot;contamination&quot; of edible plant materials with animal materials.</td>
<td></td>
</tr>
<tr>
<td>C) Vegetarians could be upset</td>
<td></td>
<td></td>
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</tbody>
</table>
### E 8.02 Public perception

#### Farming practice-related views

<table>
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</thead>
<tbody>
<tr>
<td>A) Nutritive elements in the short term</td>
<td>A) Quickly available fertilizers is last option.</td>
<td>-1 to -2</td>
</tr>
<tr>
<td>B) Origin is not consistent with organic farming principles (but other products such as blood meal set a precedent).</td>
<td>B) Post-tanning wastes unnecessary pollution</td>
<td></td>
</tr>
<tr>
<td>C) Necessary for certain crops.</td>
<td>C) Factory farming see E 8.03.</td>
<td></td>
</tr>
</tbody>
</table>
E11.04 Proposed restrictions

- Need recognized by the inspection body or inspection authority;
- Not from chemical hydrolysis;
- Not from wastes collected post-tanning (this restriction was only supported by some experts).
Conclusions

• The completed matrix gives an adequate and quick picture of key issues associated with the product.

• The matrix reflects opinions of the evaluators.

• Controversial issues have been identified and restrictions on manufacturing and origin of materials have been proposed.

• The next step would be to evaluate the product according to the restrictions proposed.
Question to the audience

- Were the critical issues identified and evaluated effectively, bearing in mind the multiple origins, manufacturing methods and uses?