Agroecological engineering to foster IWM

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A success story

- Durum wheat + subterranean clover living mulch
- 2 rows of wheat + 25-cm band of clover
- Complementarity of resource use

Developed at Coop. Biologica Collevalle Agrinatura Bomarzo (Viterbo), Italy (420 ha)
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- Durum wheat yield: ca. 10-15% less than in standard
- With 50% less wheat seeds
- Reduction of fertiliser costs for sunflower
- Extra income: grazing rent = ca. 500 Euro/ha

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## Weed management effects

Durum wheat: total weed density in 1997 (plants m\(^{-2}\))

<table>
<thead>
<tr>
<th>FERTILISATION TYPE</th>
<th>TILLERING</th>
<th>HARVEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>16.2 a</td>
<td>1.5 a</td>
</tr>
<tr>
<td>Chicken manure 15 cm*</td>
<td>8.7 b</td>
<td>1.1 ab</td>
</tr>
<tr>
<td>Chicken manure 40 cm*</td>
<td>12.6 ab</td>
<td>0.7 b</td>
</tr>
</tbody>
</table>

*Depth of incorporation in soil

Total (average) weed biomass at harvest: 11.1 g m\(^{-2}\)

Bàrberi et al. (1998)
1. The success of IWM is based on diversity and ecological knowledge
2. Successful weed management starts from targeted redesign of crop rotation
3. There are no silver bullets in IWM: need of a system approach
4. Weed management solutions promoting homogeneous cropping systems do not work in the long run (e.g. herbicide-resistant crops)
5. Policy instruments are already in place