Background

Organic farmers are facing technical constraints to combine organic farming and conservation agriculture. Factor-based experimental studies are insufficient to conclude on the feasibility of conservation agriculture on organic farms (Peigné et al., 2015).

Objectives and approach

The objective is to analyze two co-design processes.

In both cases, the overall objective of the prototyping was to preserve and promote soil fertility:
- All prototypes were designed with the same objectives and same ranking, combining expectations of the researchers and farmers (Lefèvre et al., 2013)
- For each pedoclimatic zone, the sub-groups of researchers ranked differently the objectives before designing each prototype (TILMAN-org project)

As the prototypes were designed to follow conservation principles, we compared the characteristics of the prototypes with regard to (i) soil cover, and (ii) soil disturbance.

Results and discussion

Soil cover

Soil disturbance

Tab. 1. Comparison of the results of the two methods

<table>
<thead>
<tr>
<th>Lefèvre et al. (2013)</th>
<th>TILMAN-Org Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prototypes</strong> (Fig. 2.)</td>
<td>More diversified and extreme prototypes</td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td>More innovative because of longer period of interaction?</td>
</tr>
<tr>
<td><strong>Risk Management</strong></td>
<td>Anticipation of variable conditions</td>
</tr>
</tbody>
</table>

Conclusions

Involving researchers and/or experts is relevant for capitalizing and operationalizing existing knowledge but the designed prototypes might lack of creativity.

With appropriate method, farmers could design cropping systems very different from their own systems.

References