Objectives
The objectives were to measure the influence of high levels of dietary RSM on the production and reproduction performances and the sanitary status of dairy herds and to identify the limitations, motivations and interests of the incorporation of RSM in Haute-Marne area.

Material and methods

- Two homogeneous groups (maize silage system) composed of matched pairs, made by multivariate analysis
- Animal performances recorded for 3 months: milk production per cow, fat and protein contents, artificial insemination (AI) success, leucocytes and mastitis.
- Feed cost and feed margin calculated from purchase prices of concentrates and by-products, and standardized prices for fodder: 100 €/T dry matter (DM) for corn silage.
- Sociological study based on semi-structured interviews to collect the reasons and motivations of farmers to use, or not, RSM.

Results and discussion

Animal performances

It was found that the addition of a large amount of RSM (4.8 ± 0.7 kg/dairy cow/d of RSM on a total of 5.2 ± 0.7 kg/dairy cow/d of nitrogen corrector) in the ration of the RSM group, compared to the No-RSM group, did not significantly change the raw milk production or fat content. However, it significantly increased the milk protein content, although the intake of the two groups was nearly identical.

Reproductive performances, with the success rate of first AI on the 3-month study (+1.1% success), and the health status of the udder (mammary cell count and % of infected cows/month) were not significantly modified.

Economical impact

- Feed cost and feed margin of the rations

Table 1: Animal performances recorded from the two groups of dairy farms

<table>
<thead>
<tr>
<th>Parameters</th>
<th>RSM group</th>
<th>No-RSM group</th>
<th>RSM effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk production (kg/cow/j)</td>
<td>28.1</td>
<td>28.3</td>
<td>NS</td>
</tr>
<tr>
<td>Fat content (g/kg)</td>
<td>37.4</td>
<td>37.6</td>
<td>NS</td>
</tr>
<tr>
<td>Protein content (g/kg)</td>
<td>32.9</td>
<td>32.6</td>
<td>+0.3*</td>
</tr>
<tr>
<td>Intake (kg DM/cow/j)</td>
<td>23.0</td>
<td>22.8</td>
<td>NS</td>
</tr>
<tr>
<td>AI success (%)</td>
<td>50.6</td>
<td>49.5</td>
<td>NS</td>
</tr>
</tbody>
</table>

* P value < 0.02

Results of the sociological study

As a local and non-GMO raw material with attractive price, rapeseed meal as a good image among farmers although it is perceived as a less “noble” product compared to soybean meal due to its lower protein content. However farmers who use rapeseed meal obtain generally similar or better animal performances in comparison with the use of other protein sources and improve their feed margin.

Conclusion

This study confirms that significant amounts of rapeseed meal can be introduced into dairy rations without affecting performances and allow an improvement of production costs of the dairy sector.