Plasma pregnancy specific protein B (PSPB) in days 25, 26 and 28 in two beef cattle breeds

Noya A.1*, Casasús I.1, Alabart J.L.1, Serrano-Pérez B.2, Villalba D.2, Rodríguez-Sánchez J.A. 1, Ferrer J.1, Sanz A. 1
1CITA de Aragón - IA2. Zaragoza, Spain. 2Universitat de Lleida. Lleida, Spain.
*Corresponding author: anoya@cita-aragon.es

1 Introduction
Early detection of Pregnancy Specific Protein B (PSPB) could be an accurate pregnancy diagnosis method to reduce the calving interval in extensive beef cattle farming systems.

2 Objective
Determine, based on PSPB concentrations, the earliest day to accurately diagnose pregnancy in beef cows.

3 Materials and Methods

4 Results

4.1 PSPB concentrations (ng/ml)

<table>
<thead>
<tr>
<th>Breed</th>
<th>d 25</th>
<th>d 26</th>
<th>d 28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pareda de Montaña</td>
<td>0.67b</td>
<td>0.41b</td>
<td>0.48b</td>
</tr>
<tr>
<td>Pirenaica</td>
<td>1.15a</td>
<td>1.22a</td>
<td>1.82a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-pregnant</th>
<th>Pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>d 25</td>
<td>0.67</td>
</tr>
<tr>
<td>d 26</td>
<td>0.41</td>
</tr>
<tr>
<td>d 28</td>
<td>0.48</td>
</tr>
</tbody>
</table>

No differences between d26 AUC and d28 AUC (P>0.1)

4.2 ROC curve analysis

Area under the curve (AUC): d 25 ROC curve AUC: 0.79
Cut-off value: not determined
Sensitivity: not determined
Specificity: not determined

Area under the curve (AUC): d 26 ROC curve AUC: 0.88
Cut-off value: 0.57 ng/ml
Sensitivity: 94.3%
Specificity: 78.9%

Area under the curve (AUC): d 28 ROC curve AUC: 0.93
Cut-off value: 0.91 ng/ml
Sensitivity: 94.3%
Specificity: 80.8%

No differences between d26 AUC and d28 AUC (P>0.1)

5 Conclusion
Implementing the plasma PSPB analysis on day 26 could be useful for early pregnancy diagnosis, with a similar accuracy to that obtained on day 28 and avoiding the lack of precision obtained on day 25.

Acknowledgements: to the farm staff working at La Garcipollera Research Station, G. Ripoll for statistical advise, and INIA-ERDF for RTA2013-00059-C02 fund and a predoctoral fellowship to the first author