Selenium status in sheep and goat flocks in the northeast region of Portugal

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**Objective**

➢ To confirm clinical signs of selenium deficiency found in sheep and goat flocks in the northeast region of Portugal by measuring biochemical indicators in the blood.

**Material and Methods**

➢ Free-grazing flocks (38 sheep and 38 goat) of native breeds having no access to Se supplementation were selected in the northeast region of Portugal (Figure 1).

➢ Twenty adult non-pregnant females per flock were selected for blood sampling.

➢ Two separated heparinized blood samples were collected from each animal between late Spring and early Summer and freezed until analysis.

➢ Glutathioneperoxidase (GSH-Px) enzyme levels were determined by a commercial kit (Ransel, Randox, UK) based on the method of Paglia and Valentine (1967).

➢ Hemoglobin (Hb) levels were determined by a commercial kit (HEMOGLOBIN, Instruchemie, The Netherlands) based on a standard cyanomethaemoglobin method.

➢ The selenium status of each animal was evaluated based in the following criteria:\textsuperscript{*}:

<table>
<thead>
<tr>
<th>Selenium Status</th>
<th>Percentage of Flock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficient</td>
<td>&gt; 60%</td>
</tr>
<tr>
<td>Low</td>
<td>61-100%</td>
</tr>
<tr>
<td>Marginal</td>
<td>41-60%</td>
</tr>
<tr>
<td>Adequate</td>
<td>21-40%</td>
</tr>
<tr>
<td>High (Supplementation needed)</td>
<td>1-20%</td>
</tr>
<tr>
<td>Very High (Efficient performance)</td>
<td>0%</td>
</tr>
</tbody>
</table>

\textsuperscript{*} RANDOX Laboratories Ltd. Ardmore, Diamond Road, Crumlin, Co. Antrim, United Kingdom, BT29 4Qy

**Results**

➢ The geographic distribution and the percentage of individuals of each flock with deficient levels of GSH-Px per gram of Hb are represented in Figure 2.

➢ The geographic distribution and the percentage of individuals of each flock with adequate levels of GSH-Px per gram of Hb are represented in Figure 3.

➢ The proportional distribution of animals with deficient, low, marginal and adequate levels in total flocks are presented in Figure 4, 5, 6 and 7 respectively.

**Conclusion**

The results strongly suggest that supplementation with Se should be done in some areas to reduce Se-deficiency related diseases.