

# 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

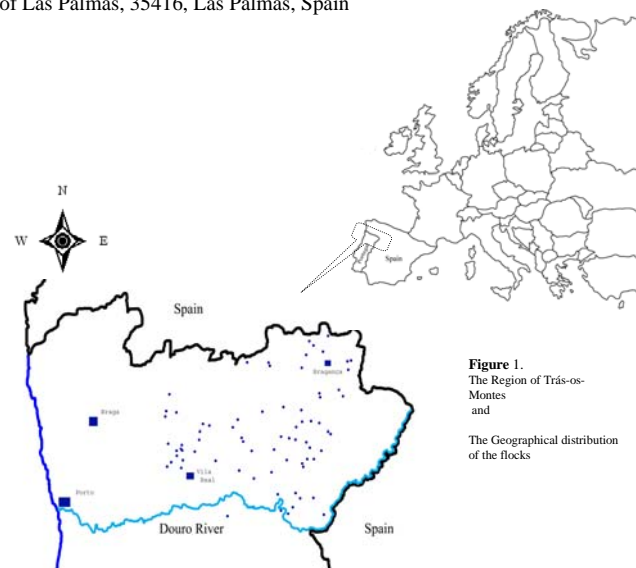
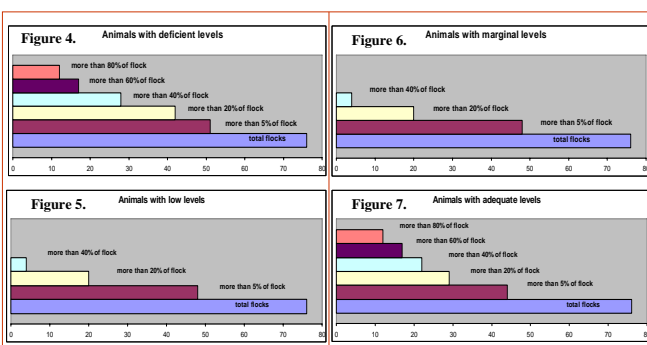
- Free-grazing flocks (38 sheep and 38 goat) of native breeds having no access to Se supplementation were selected in the northeast region of Portugal (Figure 1).
- Twenty adult non-pregnant females per flock were selected for blood sampling.
- Two separated heparinized blood samples were collected from 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\*:

Status	Units of GSH-Px per gram of Hb
Deficient	< 40
Low	41 - 100
Marginal	101 - 130
Adequate	> 130

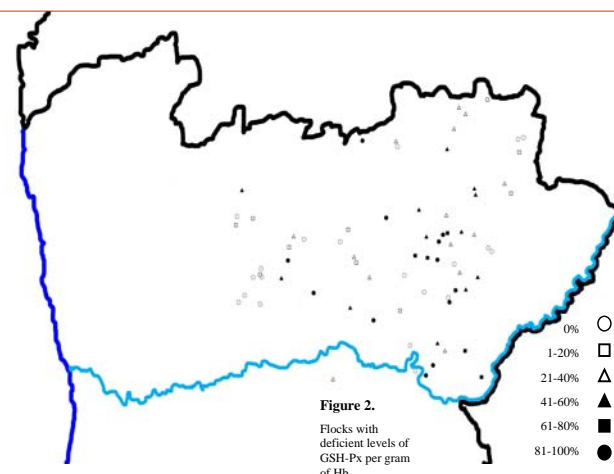
\* RANDOX Laboratories Ltd. Ardmore, Diamond Road, Crumlin, Co. Antrim, United Kingdom, BT29 4QY

## Results

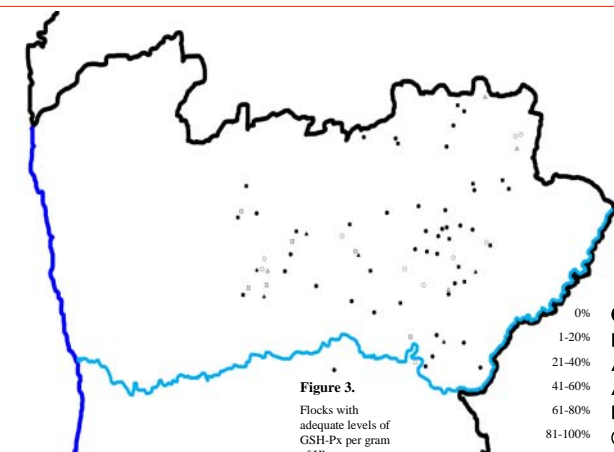
- The geographic distribution and the percentage of individuals of each flock with deficient levels of GSH-Px per gram of Hb are represented in Figure 2.
- The geographic distribution and the percentage of individuals of each flock with adequate levels of GSH-Px per gram of Hb are represented in Figure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



**Figure 1.**  
The Region of Trás-os-Montes and  
The Geographical distribution of the flocks



**Figure 2.**  
Flocks with deficient levels of GSH-Px per gram of Hb



**Figure 3.**  
Flocks with adequate levels of GSH-Px per gram of Hb

## Conclusion

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