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Assessment of the selenium status in cattle herds in Wallonia

Se^{34}_{79}

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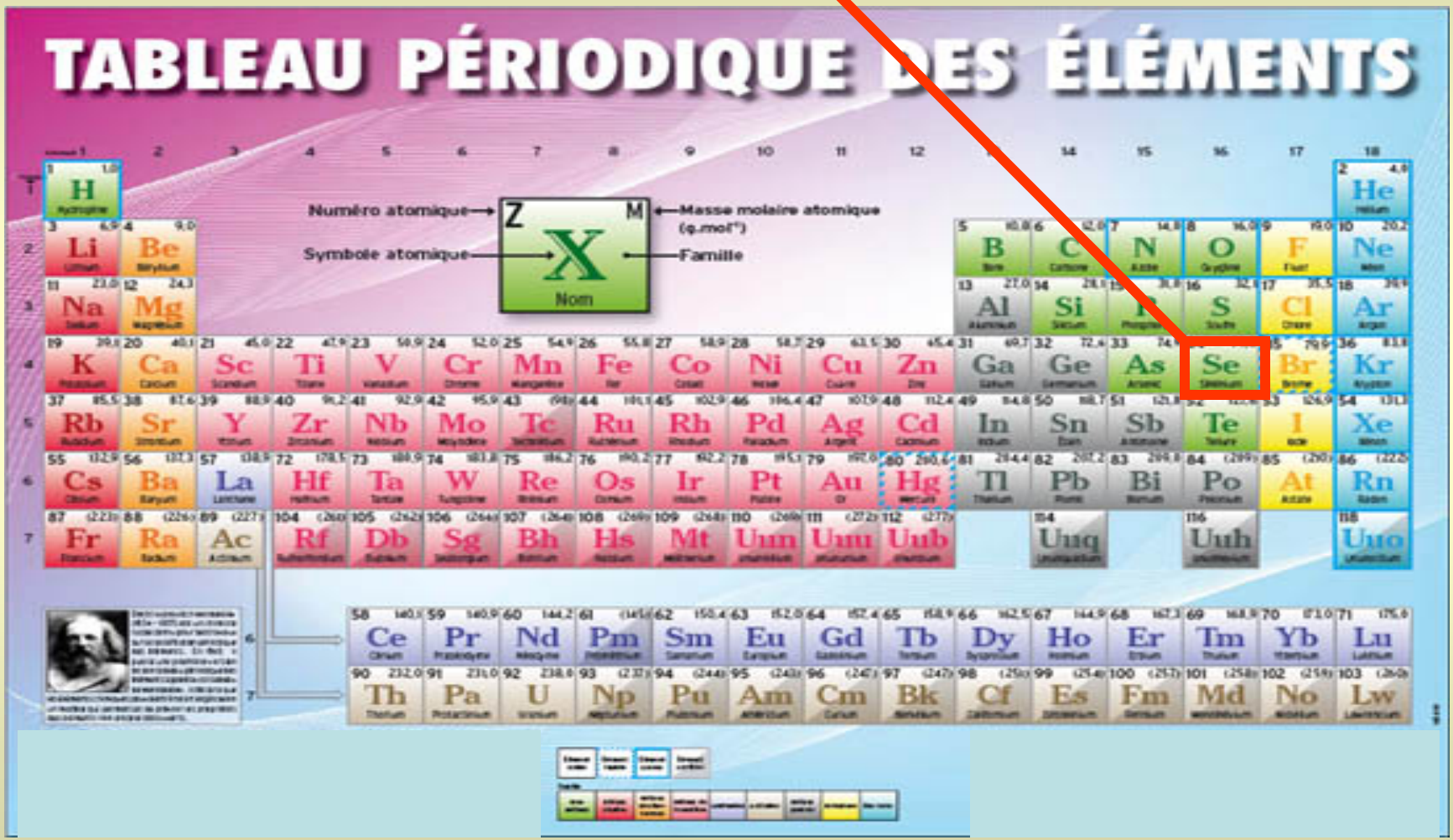
Work plan

1. Introduction
    - Selenium
    - Study area
2. Assessment of selenium status in cattle herds
    - Materials and methods
    - Presentation of results
    - Discussion
    - Classification of areas and animals
3. Conclusions

selenium

Se_{79}^{34}



Role of selenium

- Selenoproteins
- Antioxydant defense
- Reproduction, fertility

➢ If deficient ⟹ women: recurrent miscarriage.
men: spermatozoa synthesis

Role of selenium

Selenium deficiency

White muscle disease

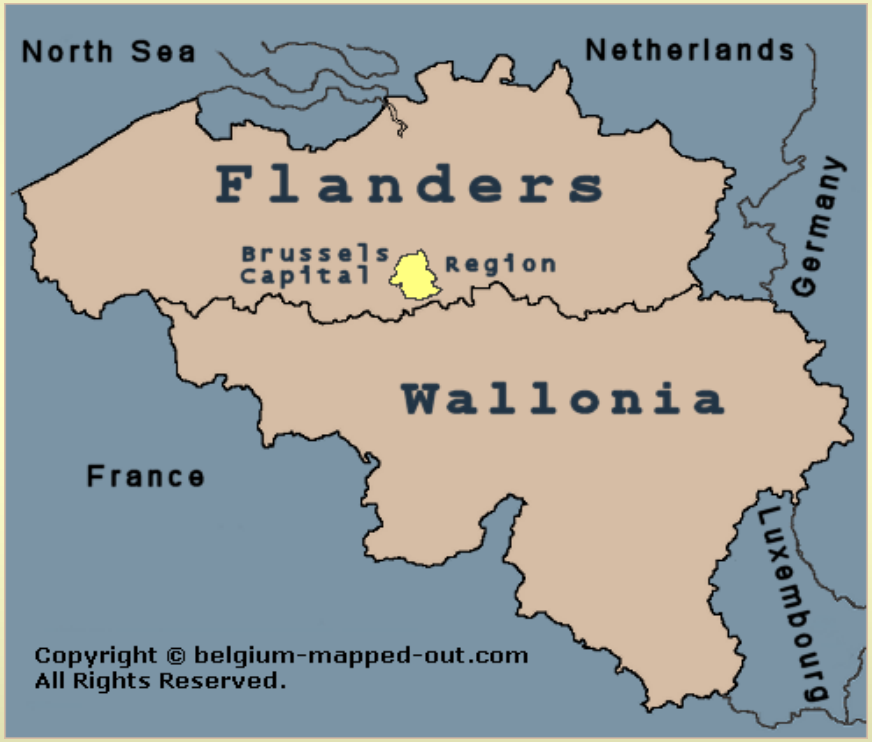
Feedstuffs low in selenium, produced in neutral or acidic soils

Aim of the study

- ✓ Highlight the presence or absence of selenium deficiency in the cattle herds in Wallonia

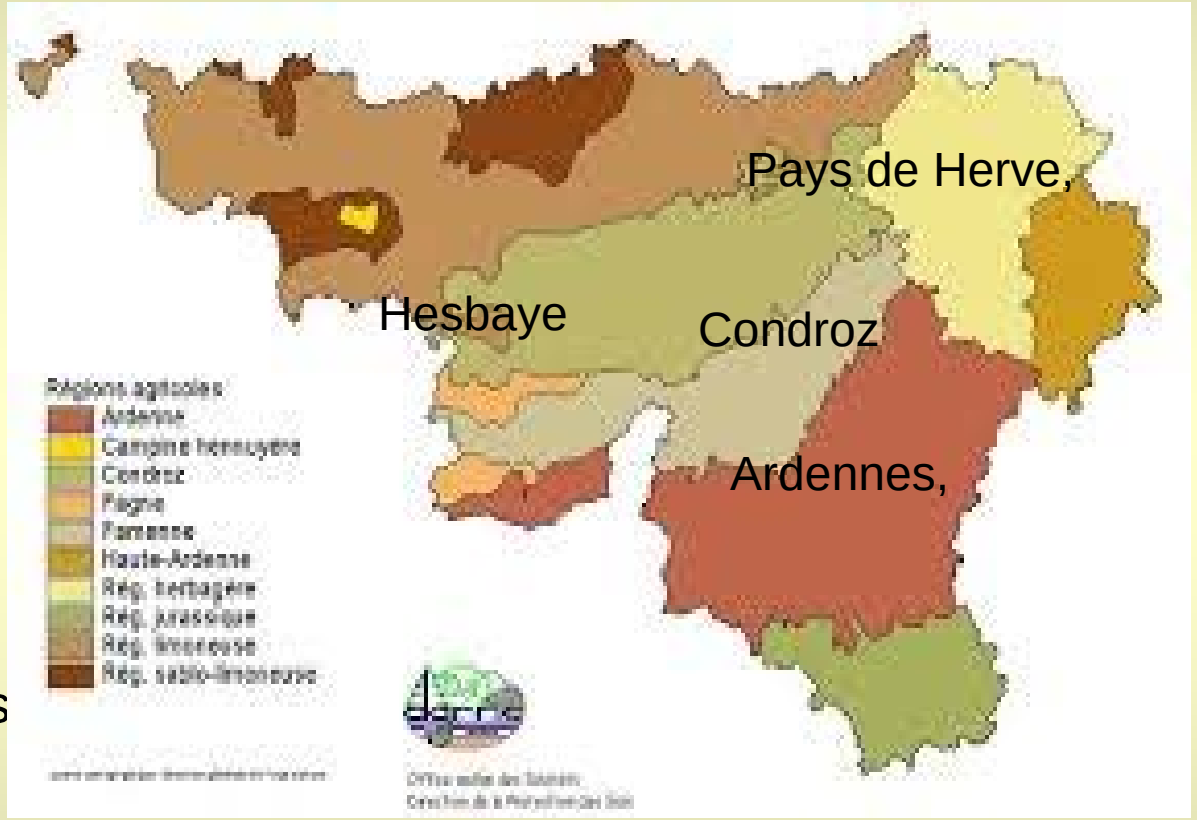
Presentation of the study area

Selenium low in the soil of Wallonia.
So, the selenium content in feedstuffs grown in these areas is also low.



- ✓Grass
- ✓ Conserved forages
- ✓ Cereals

Area study



166 farms located:

- ✓ Pays de Herve,4farms
- ✓ Ardennes, 24 farms
- ✓ Hesbaye, 55 farms
- ✓ Condroz, 83 farms

Assessment of selenium in cattle herds
Materials and methods

Beef cows

Both types of animals

Dairy cows

Age: Cows: 44 œ15 months
Heifers: 18 œ6 months
Blood samples
Selenium status: Glutathion Peroxydases (Gpx)

Classes of selenium content in the blood of heifers and cows

Classification	**Blood content (µg/l)**
Severely deficient	0 – 50
Marginally deficient	51 – 80
Adequate	81 – 160
Highly adequate	161 or more

(Dargatz et al., 1996)

Results
Effects of areas

	Mean µg/l	Standard deviation µg/l	Classification
P. Herve	**56**	27	Marginally deficient
Ardennes	39	24	Severely deficient
Hesbaye	**53**	28	Marginally deficient
Condroz	43	27	Severely deficient

✓ Highest status in Pays de Herve and in Hesbaye

✓Lowest status in Ardennes and in Condroz

✓Classification of the areas

Results

Effects of age and types of speculation

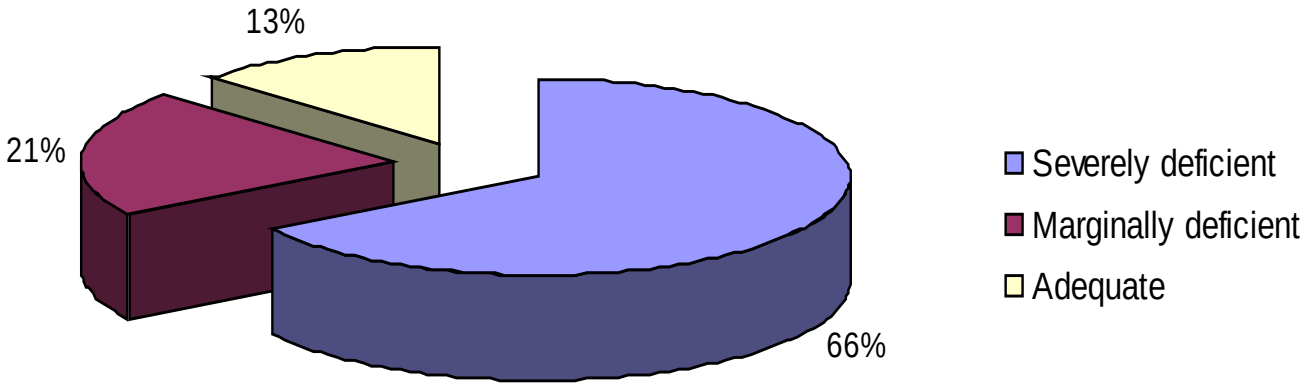
	N	Means $\mu g.l^{-1}$	Standard error	Classification
Heifers	114	46 *a*	2,4	Severely deficient
Dairy cows	82	56 b	2,8	Marginally deficient
Beef cows	102	35 c	2,5	Severely deficient

a, b and c: $p<0.05$

- ✓ Selenium status: higher in the dairy herds than in the beef herds.
- ✓ Higher selenium provision

Results

Effetcs of the individual animals



Normal selenium concentration: 80µg/l

There were 87% of the individual animals which were below the normal Se concentration.

Conclusions

- The cattle herds in Wallonia are deficient in selenium
- 13% of the animals only were characterized by an appropriate Se status
- The beef herds showed larger deficiencies compared to the dairy herds

Practical advises

- Vitamin mineral supplements with selenium
- Fertilizer fortified with selenium
- Feedstuffs high in selenium (eg: linseeds and linseeds meal from Canada)

- Beef cattle with high muscle development should be supplemented at higher rates

Thank you for your attention