Selenium status around peripartum in beef cows and calves offered grass silage and barley produced with selenium enriched fertilizers

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Introduction

- Selenium (Se) is a trace element of importance

- Implication in many processes:
  - antioxidant mechanisms
  - immune response
  - reproduction system
  - thyroid metabolism
  - anti-cancer processes

Introduction

- Soil Se relatively low in some European areas
- Se contents in the diets are very low
  => reduced Se status
- Use of fertilizers enriched in Se
  => increase Se content in feedstuffs
- Objectives: Investigate Se status around peripartum in beef cows and calves supplemented in Se with feedstuffs produced with selenium enriched fertilizers

Material and methods

- October 2002:
  - Belgian Blue herd divided in 2 groups
  - Control group (CG) - Selenium group (SeG)
  - Beginning of the Se supplementation

- Grass silage and barley grown with fertilizer containing or not Se

Material and methods

	% diet (DM)	Se content (µg/kg DM)	
		CG	SeG
Grass silage	42.9	54	165
Maize silage	19.2	27	
Barley	9.3	27	225
Dried beet pulp	9.6	109	
Bran	9.3	43	
Dehydrated alfalfa	9.7	141	

DM intake (kg)	9.4	(straw excluded)	
Se content (µg/kg DM)		59.0	125.0

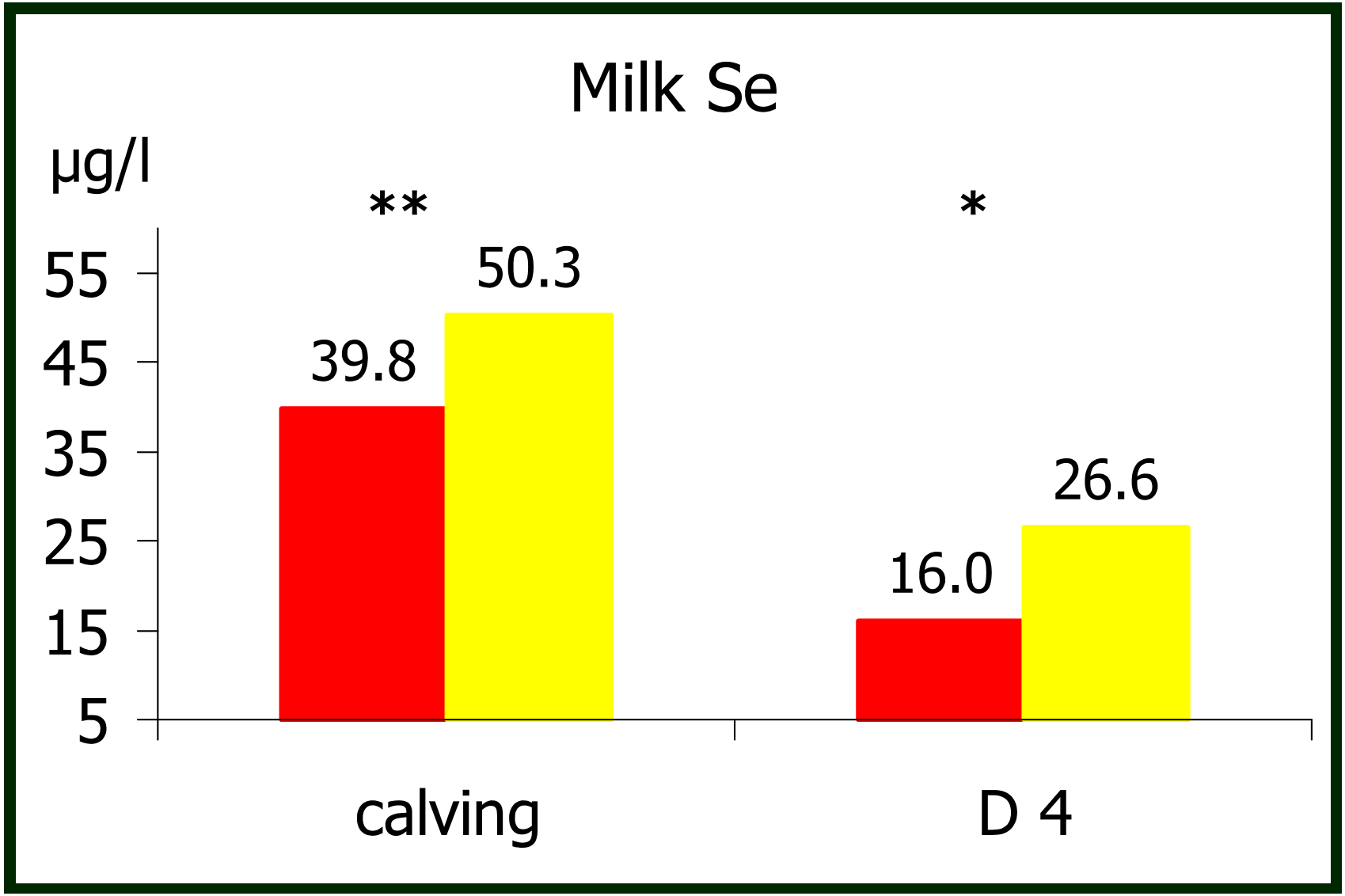
Material and methods

- Milk samples
  - Colostrum and day 4 postpartum
  - Analyses: Se content
- Blood samples
  - Cows: at calving and days 4 & 15 post partum
  - Calves: days 1, 4 & 15
  - Analyses: plasma Se, haptoglobin and fibrinogen
- Results from the winter 2002-2003

Results

Cows: CG

Cows: SeG



Results

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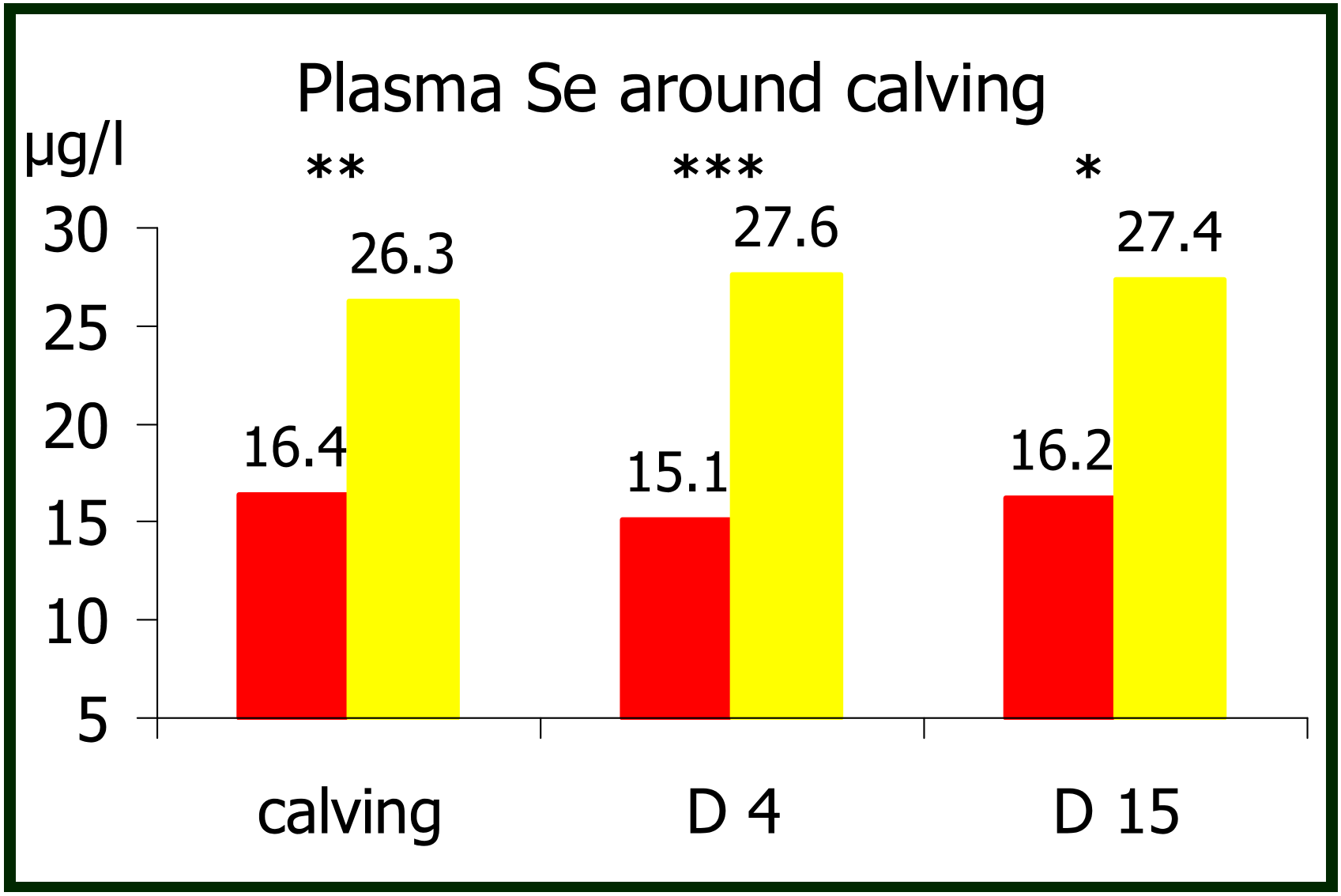
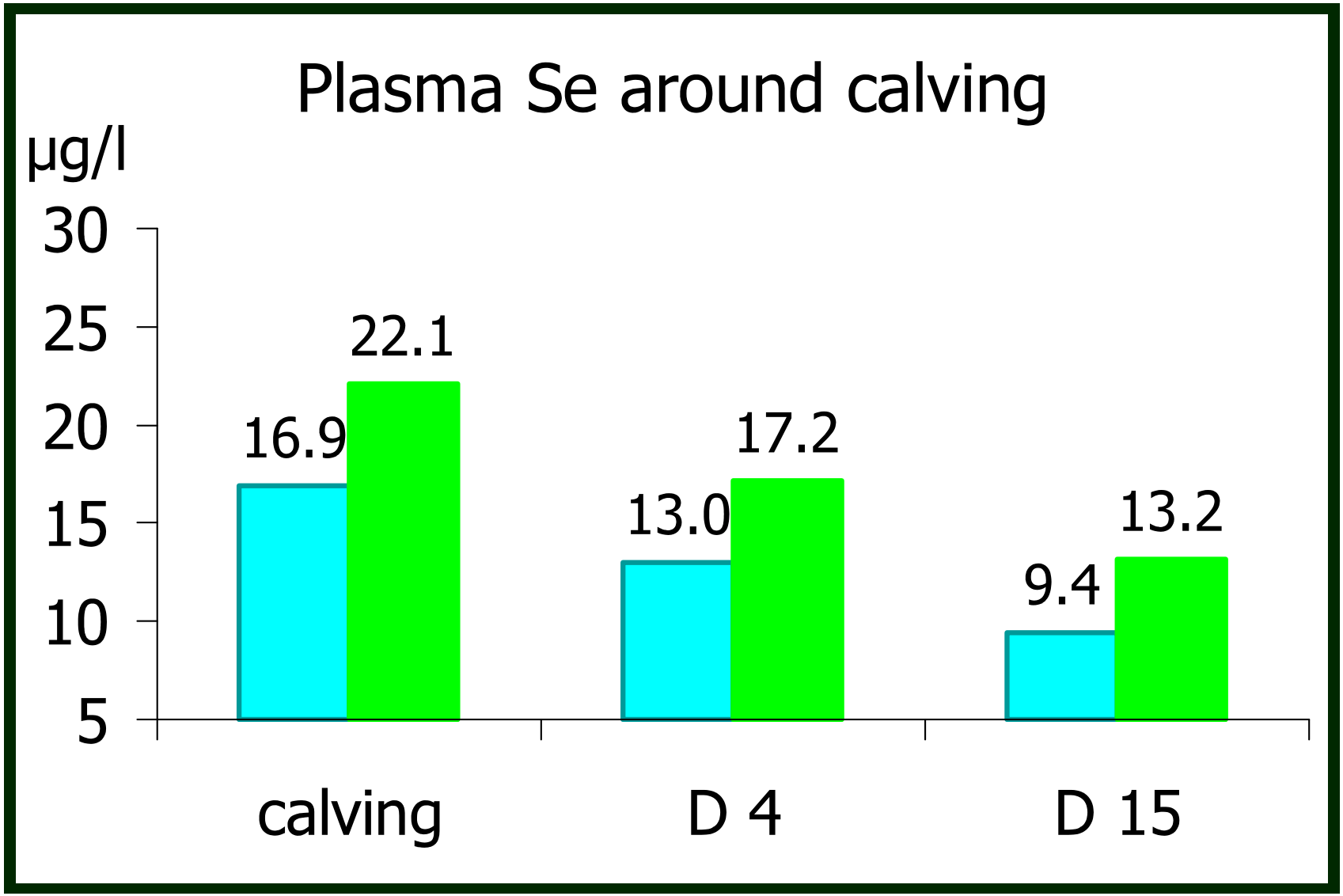
Cows: SeG



Results

Calves: CG

Calves: SeG



Results

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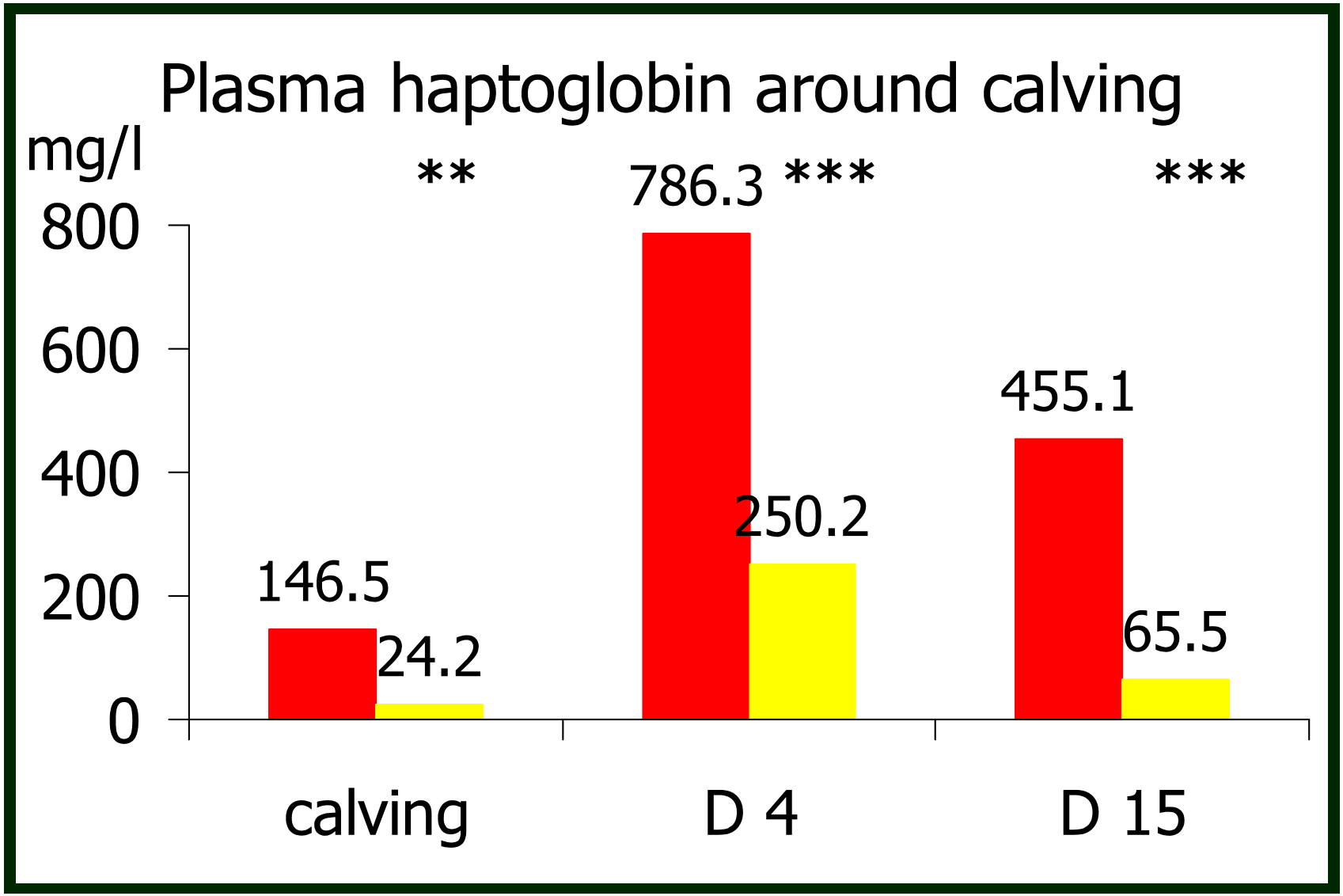

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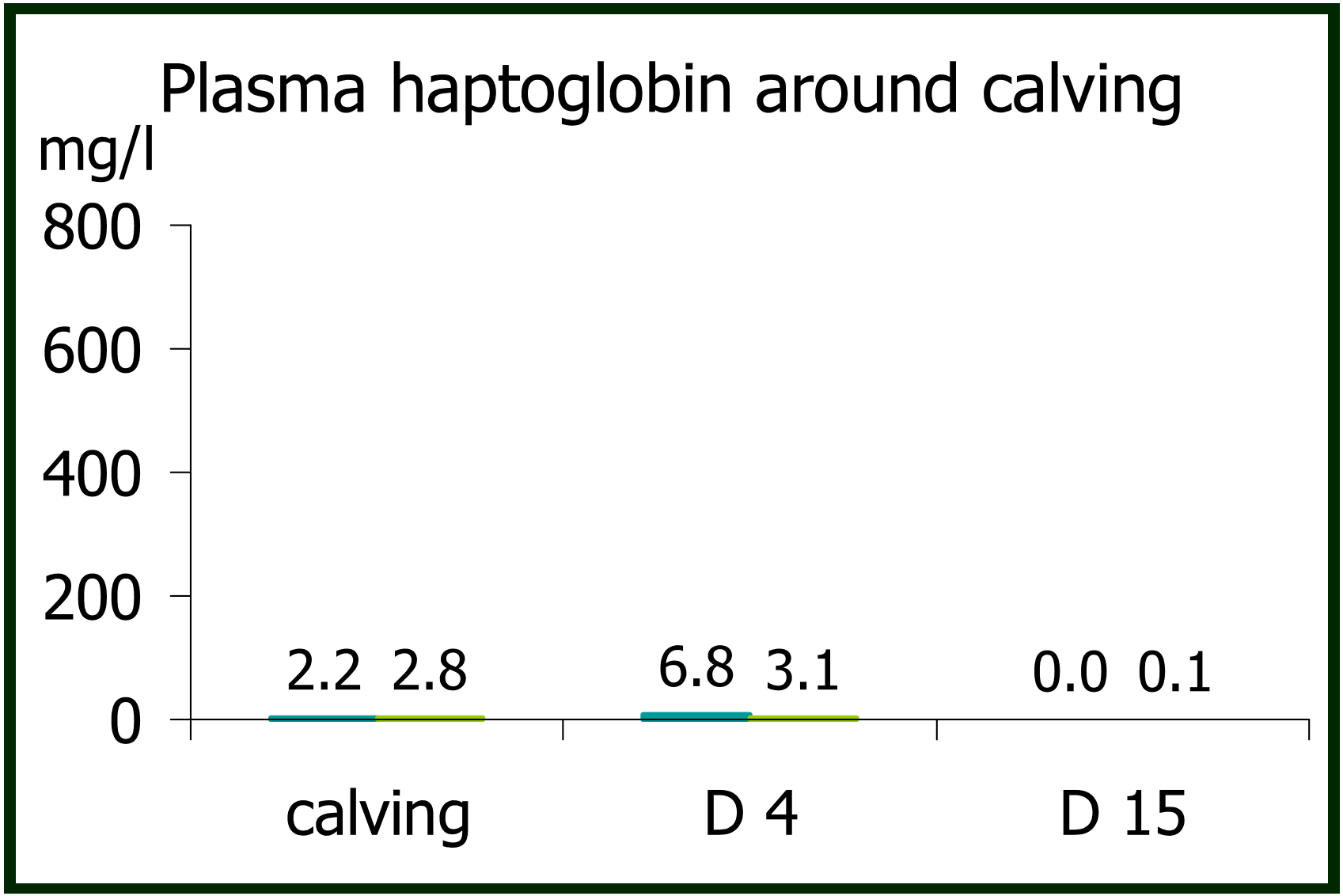

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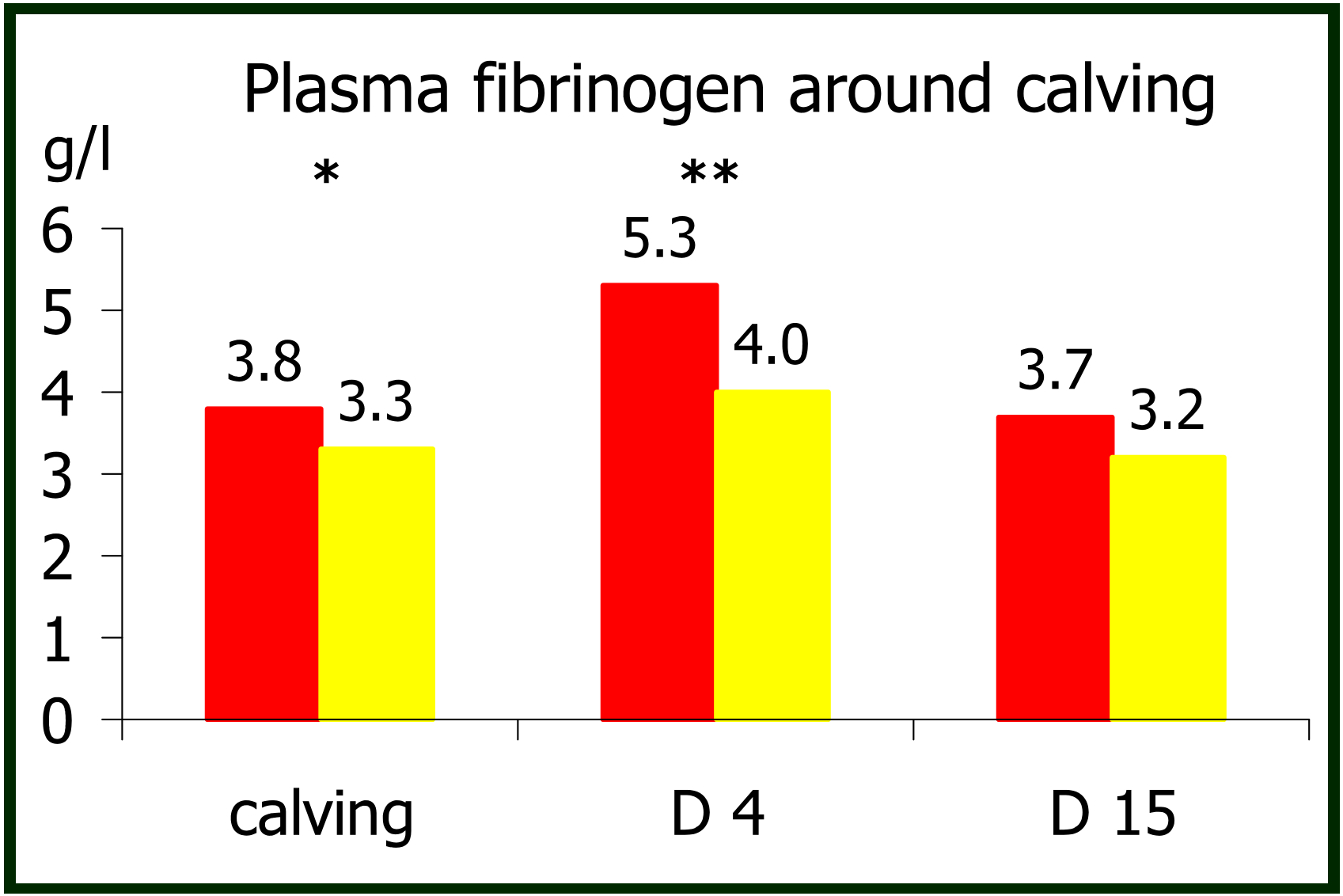

Results

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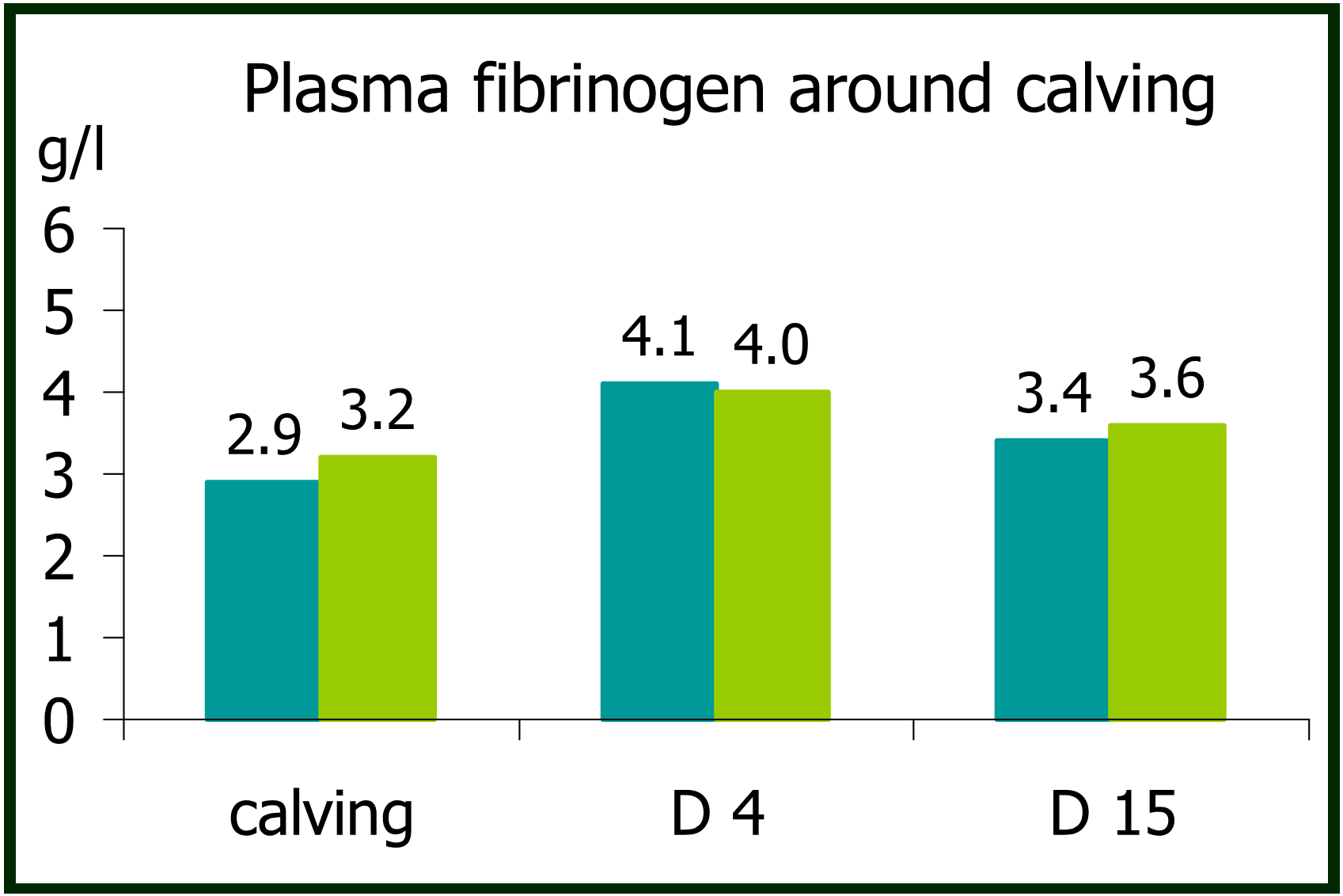

Conclusion

Se enriched fertilizer

→ Increased Se content in the feedstuffs

→ Improved the Se status in beef cows and their calves

→ Affected the inflammation markers in beef cows around peripartum

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