




**FMD Week 2010**

**FMD nsp-seroprevalence in large ruminants in 5 Egyptian governorates under vaccination control – analytical results**

Chris J.M. Bartels<sup>1</sup>, Yasser Basyouni<sup>2</sup>, Fatouh Darwish<sup>2</sup>, Dr Soheir Hasan Abdelkader<sup>2</sup>, Keith Sumption<sup>3</sup>, Kees van Maanen<sup>1</sup>


Animal Health Service Ltd, Deventer, The Netherlands  
EUFMD, Rome, Italy  
GOVS, Cairo, Egypt

VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER



In addition to descriptive results

- Estimates for true prevalence
  - Rogan-Gladen
  - Bayesian analysis
- Risk-factor analysis (logistic regression-GEE)
- Spatial distribution




VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER



**Conclusions**


- FMD virus circulation is widespread in 5 Egyptian governorates under vaccination control
- Due to test sensitivity, test results underestimate true prevalence
- Between governorates, species and age groups, there are significant differences in seroprevalence
- Within governorates, seronegative villages border FMD infected villages

VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER




**True prevalence estimation – Rogan Gladen estimation**

- Correcting for non-perfect test characteristics
  - Imperfect Sensitivity (Se = 68.9%) :
    - missing infected animals (false -)
  - Imperfect Specificity (Sp = 98.1%) :
    - indicating non-infected animals as infected (false +)



$$\text{True Prev} = (\text{App Prev} + \text{Sp} - 1) / (\text{Se} + \text{Sp} - 1)$$

VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER




**True prevalence estimation – Rogan Gladen estimation**

- Apparent prevalence  $920/2938 = 31.3\%$

	Total
Test positive	920
Test negative	2018
<b>Total</b>	<b>2938</b>

VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER



**True prevalence estimation – Rogan Gladen estimation**

- Apparent prevalence  $920/2938 = 31.3\%$

	FMD infected	FMD not-infected	Total
Test positive	889	31	920
Test negative	401	1617	2018
<b>Total</b>			<b>2938</b>

VIENNA, AUSTRIA • 27<sup>th</sup> SEPTEMBER - 1<sup>st</sup> OCTOBER

