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PREVALENCE ESTIMATION OF *SALMONELLA* IN LAYING HENS, EFFECT OF SAMPLING PROCEDURE ON OUTCOME

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INTRODUCTION

In all EU member states, *Salmonella* surveillance in laying hen herds is obligatory. In general only a limited number of pooled faeces and / or dust samples are collected to determine wether a flock is *Salmonella*-positive or not. This sampling methodology does not allow to estimate the within-herd prevalence. The aim of this study is to make a comparison between different sampling procedures for the assessment of the within-herd prevalence of *Salmonella* in laying hens.

MATERIALS AND METHODS

- 10 randomly selected flocks sampled (10 different herds)
- All flocks screened negative by the official *Salmonella* monitoring program.
- All flocks were vaccinated against *Salmonella*.
- Flocks sampled week prior to depopulation,
- On each flock following samples were collected: (1) 40 cloacal swabs of 40 randomly selected hens, (2) 5 pooled faeces samples and (3) 1 mixed dust sample
- Subsequently transport of 100 live hens to the Faculty. After transport a cloacal swab was taken from each hen (n=100).
- Finally euthanasia of all hens and collection of both caeca (pooled for further processing).
- All samples analyzed using a modification of ISO 6579:2002, as recommended by the European Community Reference Laboratory for *Salmonella* in Bilthoven, The Netherlands.

RESULTS AND DISCUSSION

Farm	Pooled faeces	Mixed dust	Cloacal swabs	Cloacal swabs after transport	Caeca after transport
1	0/5	0/1	0/40	**3/100**	**6/100**
2	0/5	0/1	0/40	0/100	0/100
3	0/5	0/1	0/40	0/100	0/100
4	0/5	0/1	0/40	0/100	0/100
5	0/5	0/1	0/40	0/100	0/100
6	0/5	0/1	0/40	0/100	0/100
7	0/5	0/1	0/40	**3/100**	**10/100**
8	0/5	0/1	0/40	**1/100**	**14/100**
9	0/5	0/1	0/40	0/100	0/100
10	0/5	0/1	0/40	**4/100**	**7/100**

- Using the on-farm sampling method, we could not detect any *Salmonella.*
- After transport, *Salmonella* Enteritidis was detected in laying hens of 4 flocks, both in cloacal swabs and in the caeca.
- Results suggest that in **flocks which are 'apparently *Salmonella*-free', a relatively large proportion of the hens can carry the pathogen without shedding it.**
- Possibly, the stress caused by the transport makes the hens go from a 'carrying' state to a 'shedding' state.

CONCLUSION

These preliminary results clearly illustrate that depending on the sampling procedure different estimates of among and within herd *Salmonella* prevalence can be obtained.

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