The prevalence of *Dermanyssus gallinae* (Poultry Red Mite) on poultry farms in The Netherlands, using AviVet® Red Mite traps

G.A. Lammers*, V. Bavinck* en F.W.M. van Dijk-Pecher#

*AviVet BV, Kauwenhoven 3, 6741PW Lunteren, The Netherlands
#MSD Animal Health, Wim de Körverstraat 35, 5831 AN Boxmeer, The Netherlands

Introduction

Dermanyssus gallinae, Poultry Red Mite (PRM), is a very common parasite worldwide that has tremendous impact on animal health, welfare and economics in the poultry industry. Prevalence of PRM-infestations on laying hen farms in Europe have been estimated at 83% in 2012, varying between 11 and 94% [1,2]. Mul et al recently published a prevalence of 79.5% in 2017 for the Dutch laying hen farms[3]. Those prevalences were based on questionnaires among poultry farmers and opinions of poultry experts working in the egg industry in Europe. Moreover, a prevalence of 100% was mentioned for laying hens in 2002 in Poland [4].

Aims of this study

This is the first study that uses a validated monitoring tool, the AviVet ® Red Mite Trap (Figure 1), in different types of poultry and different housing systems for determining PRM infestations [5]. Moreover, no recent prevalence data have been published, based on objective monitoring data.

Material & Methods

From November 2017 until October 2018 the (Dutch) National Red Mite Monitor Program performed a study on 138 farms, including 288 poultry houses. Monitoring with the AviVet ® Red Mite Trap was performed on (broiler and laying-type) breeding farms, rearing farms and laying hen farms with different housing systems: free-range, barn, enriched cage. The traps were installed according to the protocol described in literature [5]. From all data in this study, only the first PRM monitor results of each poultry house were used to determine the prevalence of *D. gallinae* in The Netherlands

Figure 1. AviVet ®Red Mite trap used for catching *D.gallinae*

Figure 2: Percentage of houses in Dutch poultry sector with *D.gallinae* infestations, differentiated by poultry type and housing system.

Data represent the mean *D.gallinae* infestation rate for all poultry types together looking at poultry houses (76.7% positive for PRM) and are subdivided in rearing hens, breeder hens and laying hens, and each of them, further subdivided in the different husbandry types. For the rearing houses in Free range (n=9), barn egg (n=17), Enriched cages (n=1) and broiler breeders (n=5). For the Breeder hens in laying breeder (n=10) and broiler breeders (n=38). For the laying hens in Free range (n=70), Barn egg (n=125) and Enriched cages (n=13)

Results

- *D.gallinae* prevalence was 82.6% (n=114/138) at farm level and 76.7% (n=221/288) at house level.
- At farm level, 86.4% (n=95/110), 41.2% (n=7/17) and 100% (n=14/14) of the laying hens farms, rearing farms and breeding farms, respectively, were positive for *D.gallinae* infestations. Whilst at house level: 80.8% of the laying hen houses (n=168/208), 34.4% of the rearing houses (n=11/32) and 87.5% of the breeding houses (n=42/48) had an infestation with *D.gallinae*
- Slighty more than 60% of the houses without a *D.gallinae* infestation (n=67) were below 30 weeks of age
- Free-range flocks had a higher *D.gallinae* infestation rate compared to non free-range flocks, respectively, 82.3% and 74.6%. However, this was not statistically different (p=0.1711).

Conclusions

Our data demonstrate that *D.gallinae* infestations are substantially present (82,6%) in all levels of the poultry chain. Moreover, there seems to be a higher prevalence on free range farms.

References

1. Mul M.F. (2013)
2. Sparagano O.A.E (2014)
3. Mul M.F. (2017)
4. Cencek (2003)
5. Lammers et al. (2017)