

**STSM Final Report**  
**Cost Action FA 1404**  
**COREMI**

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**Period of stay:** 1<sup>th</sup> - 7<sup>th</sup> May 2017

**STSM project title:** *Quantification of the impact of PRM on layer welfare – introduction to field and laboratory work for the Quantification of PRM prevalence on Spanish layer farms and in vitro and laboratory techniques for PRM control experiments.*

**Aim of the STSM:** The main aim of the study of which this STSM is part is to validate accuracy of both examined types of traps (Tube/ AVIAVET) by counting mites referring to available scales and use the scores for the evaluation of the impact of prm on layer welfare. Identifying vaccine candidate proteins by comparison of the proteins expressed by different prm stages is the next aim of this ongoing project.

**Work description of the STSM:**

During this one week STSM period counting and classifying morphological development differences of captured frozen red *D. gallinae* were trained and investigated (George et al., 2015; Palma et al., 2012).

Prm development stages were classified into 2 stages (Adults/ Nymph). Also fed and unfed mites were separated. Thus, classified stages in this study consist of recently fed adult, Fed adult, Unfed adult, Recently fed nymph, Fed nymph and Unfed nymph.

Separating and sorting different stages in Eppendorf were trained. AVIAVET traps were weighted and number of captured mites will be counted according to stages The obtained trap weights, and mite numbers will be included in the database for analysis of impact of prm on layer wellbeing in order to study the correlation of trap and environmental scores to number of captured mites.

On the other hand sorting of field captured prms according to feeding and developmental stages is the first stage of investigations vaccine candidate proteins. As the ongoing vaccine candidate study at the institution is currently at a point of analysis of generated sequences, information on protein extraction and purification and candidate test algorithms were conveyed orally.

#### **Further activities:**

In addition, during this week of STSM I joined the IREC team for sampling of field trapped magpies. Blood samples were taken and cloaca samples were collected from anesthetized birds. Liver, kidney, heart and brain samples were taken of hunter harvested magpies and frozen for further investigations. The aim of this study is to evaluate viral infections and investigate the viral infections contamination between wild and domestic birds.

Very good relationship has been established between both parties and I am eagerly looking for future collaborations with IREC regarding to vaccine development issues and interaction between wild and domestic birds.

#### **References:**

George, D.R., Finn, D.R., Graham, K.M., Mul, M.F., Maurer, V., Moro, C.V., Sparagano, O.A.E., (2015). Should the poultry red mite *Dermanyssus gallinae* be of wider concern for veterinary and medical science? *Journal of Parasites & Vectors* 8: 178.

Palma, A.D., Giangaspero, A., Cafiero, M.A., Germinara, G.S., (2012). A gallery of the key characters to ease identification of *Dermanyssus gallinae* (Acari: Gamasida: Dermanyssidae) and allow differentiation from *Ornithonyssus sylviarum* (Acari: Gamasida: Macronyssidae). *Journal of Parasites & Vectors* 8: 178.

**Pictures illustrating the activity during the STSM:**

