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Including veterinary toxicology

14th International Congress of the European Association for Veterinary Pharmacology and Toxicology held in Wroclaw, Poland, June 24–27, 2018

Guest edited by Błażej Poźniak, Marcin Świtała and Johanna Fink-Gremmels

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for average dust contamination. Risk characterization accounted for the Adverse Effect Level (AOL) at 0.0035 mg kg^{-1} in 90 days exposed rats, for neurotoxicity, liver, and thyroid end-points (ANSES, Demande n° 2017-SA-0178).

Results: The null hypothesis was rejected (adjusted H: 22.358; d.f.: 1; *p* value: 2.26×10^{-6}). The median and mean values of total fipronil in dust samples in absence of pets were 24.2 and 278.2 mg kg^{-1} dry weight, respectively, against 702.8 and 6138.9 mg kg^{-1} in presence of pets. The estimated intake was 54.8 and 2232.0 mg kg^{-1} body weight in toddlers and kittens, respectively. Risk characterization indicates a no-concern situation from dust (Margin of Safety – MoS = 3.65) in toddlers without considering the worst-case scenario (data not shown), against a potential exposure of toxicological relevance in kittens (MoS = 0.09), based on average values. [Correction added on 18 July 2018, after print and online publication: in Abstract O4.2, some texts and values in 'Results' section have been corrected in this version.].

Discussion: In presence of treated pets, dust can be considered a relevant source of fipronil for vulnerable groups within an aggregate exposure scenario. These findings should be matched with the evidences about the reported high rate of children admitted to first aid centers for probable biocides intoxication (ANSES, Demande n° 2017-SA-0178), as well as with the onset of pest-resistance to fipronil [3]. Education programs to consumers about the indoor management of biocides are envisaged within a One Health approach.

References: 1. Salis *et al.* (2017) *J Env Sci Health B*; 52: 699–709.
2. Chow *et al.* (2015) *Environ Res*; 136: 173–179.
3. Eiden *et al.* (2015) *J Med Entomol*; 52: 429–436.

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O4.3 | Drug residues assessment after extra-label use of fipronil in laying hens

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Introduction: The current increase in Argentinian poultry production is closely linked to the need for parasite control to achieve optimal production standards. However, the availability of approved antiparasitic compounds for use in poultry is scarce. Fipronil (FIP) is an insecticide belonging to the pyrazole class. FIP is authorized to control ectoparasites in small animals and, in some countries, cattle. It is suspected that extra-label FIP is used worldwide in poultry farming to control ectoparasites (mainly the poultry red mite *Dermanyssus gallinae*). Different Maximum Residue Limits (MRLs) such as 0.005 for EU [1] or 0.03 µg g^{-1} for USA [2] have been established for this molecule (sum of FIP and its sulfone metabolite, expressed as FIP) in eggs.

Objective: The goal of the current study was to investigate the FIP and the FIP-sulfone metabolite residues profiles in eggs after its extra-label administration to laying hens.

Materials and Methods: Hens from a local farm were extra-label treated with FIP (ECTOLINE® 1%) in feed for 1 week. Eggs were collected for a 36 days post-treatment period. Egg white and yolk samples were processed and analysed by HPLC with diode array detection to determine FIP and FIP-sulfone metabolite concentrations.

Results and Conclusions: Drug residues did not reach measurable concentrations in egg white samples after extra-label administration of FIP to laying hens. Residual concentrations of fipronil-sulfone (active metabolite) were found in egg yolk at concentrations higher than those in the established MRLs. A maximum residue level (C_{max}) of 2.10 ± 0.34 µg g^{-1} was quantified at 9 days (t_{max}) after the beginning of treatment. Since a withdrawal period has not been established, these data strongly suggest that extra-label use of FIP could constitute a potential risk to consumers with the consequent negative economic repercussions in poultry production.

References: 1. EU Pesticides database in http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=pesticide.residue.CurrentMRL{00AMP00}language=EN{00AMP00}pestResidueId=302
2. U.S Code of Federal Regulations in: www.ecfr.gov/cgi-bin/text-idx?node=se40.24.180_1517{00AMP00}rgn=div8

O4.4 | Cross-contamination of feeds with coccidiostats – is there risk for consumers?

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Introduction: Coccidiostats are among the most commonly used pharmacologically active compounds in animal production. They are registered as feed additives and they can cross-contaminate feeds for non-target animals. In consequence, their residues in food of animal origin may occur. European Food Safety Authority assessed the risks resulting from feed cross-contamination with coccidiostats and European Commission enforced the maximum levels (ML) in 2009. Since then, however, new data appeared that will be discussed in this presentation.

Materials and Methods: Four different experiments were performed in National Veterinary Institute, Pulawy to describe the transfer of coccidiostats from feed to eggs or milk. Laying hens received decoquinate (0.34 mg kg^{-1}, ML = 0.4 mg kg^{-1}) or semduramicin (0.27 mg kg^{-1}, ML = 0.25 mg kg^{-1}) in feed for 14 days followed by 14 days withdrawal. Eggs were collected daily during the whole