

FEATURE ARTICLES

SELENIUM ACCUMULATION IN EUROPEAN STARLINGS NESTING IN A SELENIUM-CONTAMINATED ENVIRONMENT

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Abstract. I compared selenium (Se) levels in blood, liver, egg, and diet samples from European Starlings (*Sturnus vulgaris*) nesting at Kesterson Reservoir, Merced County, California and the surrounding area. Concentrations were highest in adult and nestling blood (8.3 and 5.5 $\mu\text{g g}^{-1}$, respectively), nestling liver (7.5 $\mu\text{g g}^{-1}$), and eggs (4.6 $\mu\text{g g}^{-1}$) from nest boxes in interior parts of Kesterson compared to those from the perimeter (adult and nestling blood = 4.0 and 1.4 $\mu\text{g g}^{-1}$, respectively, nestling liver = 4.7 $\mu\text{g g}^{-1}$, eggs = 2.8 $\mu\text{g g}^{-1}$) and off-site (nestling blood = 3.8 $\mu\text{g g}^{-1}$, liver = 4.3 $\mu\text{g g}^{-1}$, egg = 2.7 $\mu\text{g g}^{-1}$). No hatching failure or embryo effects were observed. Although I found strong positive relationships in Se levels among tissues and eggs, variability of dietary exposure and differences in depuration rates across tissues confounds prediction of Se concentration. Nevertheless, I found blood Se to be a good indicator of dietary exposure that can be sampled nondestructively.

Key words: bioaccumulation, blood selenium, depuration, egg selenium, European Starling, liver selenium, *Sturnus vulgaris*.