

福島県二本松市東部で採取された野生動物 (数種の鳥類および哺乳類) の放射性セシウム蓄積

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Radioactive Cs Accumulations in Wildlife (Some Species of Birds and Mammals) Collected from Eastern Part of Nihonmatsu City, Fukushima Prefecture, Japan

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Summary

Radioactive Cs (^{134}Cs and ^{137}Cs) concentrations were measured in various organs and tissues of wild animals (Four species of mammals and 3 species of birds) collected from eastern part of Nihonmatsu City in Fukushima Prefecture, during 2011 to 2013. Muscular concentrations of radioactive Cs were higher than the other organs and tissues such as liver and kidney. However, the tissues which has important role such as brain and reproductive gland showed comparative concentrations of radioactive Cs. Decreasing trends of radioactive Cs in body of wildlife were observed from in April of 2011 to end of 2013. In the other hand, species inhabiting in forest tended to keep relatively high levels of radioactive Cs.

Concentrations of radioactive Cs in great cover of birds were higher than those in other parts of feather such as breast feathers. Clearly high concentrations were observed in vane of feather when comparing with those of shaft. These findings suggest that feather samples of birds are effective parts as indicator of exterior pollution of their habitat and also suggest that air pollution of radioactive Cs still continued during on 2012 and 2013. Relative higher concentrations of radioactive Cs were detected in the body of piglets than those of mother of Japanese wild boar and comparative concentrations were observed in the egg albumen and yolk of spot-billed duck. These were suggested that radioactive Cs can transfer to fetus and eggs from mother's body and pollution may continue through generations. Therefore, the continual monitoring using wildlife is require strongly for evaluation of ecological risks and human health.

Key Words: Species specific accumulation, Tissue distribution, Distribution in avian feather,
Monitoring of air pollution, Temporal trend

和 文 要 約

2011～2013年に福島県二本松市東部で採取された野生動物(哺乳類4種、鳥類3種)の組織器官における放射性セシウム濃度を分析した。体内分布では、安定セシウムと同様に筋肉組織で蓄積する傾向がみられ、高濃度で蓄積した個体ほど顕著であった。また脳や生殖腺など各種関門で守られている組織にも放射性セシウムの蓄積がみられた。イノシシやカルガモを用いて2013年までの経時変化を検討した結果、本地域の野生動物における放射性セシウムは減少傾向にあることが示唆された。鳥類の羽では大雨覆や羽弁に高濃度がみられ、放射性セシウムの大気汚染が反映されていた可能性が示された。イノシシ幼獣や鳥類の卵に、母親と同レベルかそれ以上の放射性セシウムが検出された。

原発事故発生から2-3年目となった調査時期には、ヒトへの影響理解が不十分であるが、世代交代の早い野生動物の調査は、有効な知見をもたらすと期待される。また、本研究で示唆された大気汚染や次世代汚染など、生態系の汚染把握も重要といえ、継続的なモニタリングが必要であろう。