

Metabolism of 2,4-Dichlorophenoxyacetic Acid in Laying Hens and Lactating Goats

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2,4-Dichlorophenoxyacetic acid (2,4-D) labeled with ¹⁴C was found to be rapidly eliminated by laying hens and lactating goats dosed orally for 7 consecutive days at 18 mg/kg of food intake and for 3 consecutive days at 483 mg/kg of food intake, respectively. Excreta of hens and goats contained >90% of the total dose within 24 h after the final dose. Tissue residues were low and accounted for <0.1% of the dose in these animals. For hens, the residues in muscle, liver, and eggs (0.006–0.030 ppm) were lower than those found in fat and kidney (0.028–0.714 ppm), 2,4-D equivalents. The tissue with highest residue in goat was the kidney at 1.44 ppm, 2,4-D equivalents. Milk, liver, composite fat, and composite muscle had significantly lower residue levels of 0.202, 0.224, 0.088, and 0.037 ppm, respectively. The most abundant tissue residue was 2,4-D and acid/base releasable residues of 2,4-D. A minor metabolite was identified as 2,4-dichlorophenol.

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