

Learning ability of 1-d-old partridges (*Alectoris rufa*) from eggs laid by hens fed with different n-3 fatty acid concentrations.

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1. The diets of commercial strains of laying partridge are usually lower in polyunsaturated fatty acids (PUFA) and n-3 fatty acids than the diets of wild partridges. The aim of this experiment was to examine the effects of three different PUFA and n-3 concentrations in partridge laying diets. 2. Offspring learning ability (passive avoidance test of 1-d-old chicks) was used to assess the effect of three different maternal diets (144 chicks were tested for each diet). A negative experience, allowing the bird to peck a bead bathed in a bitter liquid (methyl anthranilate-MA), was used for this purpose. The adults had been fed one of three different diets with n-3 contents of 0.48, 4.04 or 7.60 g/kg. 3. There was better memory retention in the offspring of adults fed the intermediate n-3 content compared to those fed the lower content. Discrimination ratio (DR) of the latency time toward the wrong (red) bead was less for the lower n-3 content (0.48) than for the middle n-3 PUFA content (0.43). DR of the number of pecks toward the wrong beads was greater for the lower n-3 content (0.51) than for the middle n-3 PUFA content (0.71). 4. The partridges fed the diet containing the lowest concentration of n-3 and PUFA were unable to express the expected behavioural score (neural embryo development index) given the genetic characteristics of the animals.