

Effect of specific noise in laying hens

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We compared fluctuating asymmetry in bilateral traits in laying hens exposed to either a stressful acoustic or standard environment. We hypothesized that laying hens exposed to noisy environment (experimental group, n=52) would show greater developmental instability than those exposed to a standard environment (control group, n=52). To assess developmental instability, we measured fluctuating asymmetry in thirty-six-week-old White-faced Spanish hens, housed in floor pens, following exposure to either a noisy acoustic stimulus (playback of 90dB background noises plus truck, train, and aircraft noises from 9.00am to 2.00pm) or a standard acoustic environment (65dB) for eight weeks starting at twenty-eight weeks of age. We calculated the fluctuating asymmetry from the measurements of bilateral traits: middle toe, leg (tarsometatarsus), wing (ulna), and wattle length, and leg (tarsometatarsus) width. The experimental group had higher absolute and relative fluctuating asymmetry of leg length ($P<0.05$) than the control group. These results suggest that noisy acoustic environment has adverse effects on bone maintenance of laying hens, and offer some indications about hens housing conditions.

Keywords: Noise, Fluctuating asymmetry, Stress, Laying hens