

When Mites Invade, Mother Finches Protect Their Sons

A University of Arizona study finds that house finch mothers protect their sons if mites infest the nest.

By The BirdChannel Editors

Posted: January 23, 2007, 2 a.m. PST

If mites infect the nest of a house finch (*Carpodacus mexicanus*), the hen protects her sons by laying eggs containing males later than those containing females, according to new research from University of Arizona (UA) researchers. When mites were absent, eggs were laid in a more random fashion with equal chances of the mother laying a female or male egg first.

"Sons are more sensitive to the mites than daughters," said Alexander V. Badyaev, a UA assistant professor of ecology and evolutionary biology. "Mothers minimize sons' exposure to mites by laying male eggs later than female eggs. As a result, the males are in the nest fewer days."

Exposure to mites causes a hormonal change in a breeding female finch's body which affects the egg-laying order and accelerates the development of the in-egg males, which helps protect them from the mites. This is the first documentation of "maternal manipulation of both ovulation and growth" influencing the duration of development in birds, Badyaev added. This is an important finding, Badyaev said, because it shows that mothers can adjust their young's growth period depending on local conditions and seasonal changes such as predator risk, parasitism and food abundance.

Badyaev and his colleagues have studied a population of house finches on the UA campus since 2002. Their paper, "Sex-Biased Maternal Effects Reduce Ectoparasite Induced Mortality in a Passerine Bird" was published in the September 18, 2006, online edition of the Proceedings of the National Academy of Sciences as well as the September 26, 2006, print edition.