

Bed bug (*Cimex lectularius* L.)

General Information

Bed bugs are known as human parasites, but these bugs can also infest chickens. Bed bugs do not remain permanently on their host, but instead spend most of their time in cracks and crevices of nearby structures traveling to the host at night to feed. They are not usually found in poultry facilities where birds are housed in conventional cages suspended above ground as these facilities offer no harborage for the bugs during the day. However bed bugs can be problematic in furnished cages, cage-free, free-range, and backyard flocks where daytime harborages like nest boxes are available.

Identification and Life History

Adults are dark brown and dorso-ventrally flattened (like a pancake, Fig. 1). Nymphs are smaller and lighter brown. Immatures and adults feed on blood, and will turn reddish in color after a meal. Immature bed bugs can survive for several months without blood feeding, and adults may live for up to a year without a blood meal. Bugs range in size from 4-12 mm in length as they develop. Eggs are laid in cracks and crevices where adult bugs hide and hatch in 4-12 days. There are five nymphal instars that blood feed; each lasts 3-10 days and the entire cycle from egg to adult requires 24-128 days to complete, depending on temperature. Up to 540 eggs may be laid by one female in her lifetime. Bed bugs exhibit a peculiar mating strategy called “traumatic insemination” where the male inseminates the female by using his sex organ to puncture a hole through her exoskeleton (quite traumatic!) rather than by inseminating her through a genital opening as is the case for nearly all other animals.



Figure 1. Adult bed bug. Image by Amy C. Murillo, UC Riverside.

Damage

Blood feeding by bed bugs can cause considerable distress and blood loss to birds, especially when bug populations reach high levels; adult females may feed every 3-4 days. Chickens, like humans, may have allergic reactions to bed bugs that varies among individuals. However information on interactions of chickens and bed bugs is lacking. It is expected that the incidence of bed bugs in both commercial and backyard poultry facilities will increase in the future as bed bugs are becoming more

common throughout U.S. urban environments due to reduced pesticide use as well as increased pesticide resistance of bed bugs. Bed bugs have not been found to vector any poultry diseases, though chickens in heavily infested houses may develop anemia leading to high morbidity and even mortality of young birds. Bed bug populations are not species specific and can be transferred to poultry from human environments.

Integrated Pest Management

Monitoring: Cracks, crevices, and corners of poultry houses (especially nest boxes) should be inspected for bed bugs, eggs, and fecal spots (Fig. 2). Use a bright flashlight to more easily view bed bugs in these locations. Interception traps are available as a passive alternative to inspections, but may not be suitable in dusty hen houses (and must be placed out of reach of chickens). There are new trap technologies using attractants for monitoring bed bugs in residential homes, but these have not yet been tested in poultry facilities to confirm efficacy in this environment.



Figure 2. Bed bug adults, immatures, and eggs in a nest box.
Image courtesy of Cornell Vet Entm.

Management: Prevention of an infestation is the best defense. Do not move nest boxes, cages, or other housing structures without thorough inspection for evidence of bed bugs. Feed containers, watering stations, and other poultry rearing supplies should be similarly inspected before transport. Good construction of nest boxes (tight fitting joints) can help reduce bug harborage. When prevention fails, insecticidal dust or perimeter insecticide sprays can be applied to crack and crevice harborages to reach the bed bugs where they rest during the day. Physical remove

of all life stages by vacuuming or other clean out and disinfection methods may also help but are unlikely to eradicate bugs. Heat treatments are used to kill bed bugs in residential settings, and may be of some use in poultry facilities, though these treatments often require a pest management professional and may be costly.

References for more information

For more information on bed bugs and human health please see:

http://civr.ucr.edu/bed_bugs.html

Axtell, R.C., 1985. Arthropod Pests of Poultry. In: Livestock Entomology (ed. Williams, R.E., Hall, R.D., Broce, A.B., Scholl, P.J.), pp. 269-295. New York: Wiley-Interscience Publication. Print.

Sutherland, A.M., Choe, D.-H., and V.R. Lewis. 2013. Bed Bugs: Integrated Pest Management in and around the Home. UC ANR Pest Notes #7475.
< <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7454.html>>

Brooks, S. 2000. Bed bugs. University of Florida.
<http://entnemdept.ufl.edu/creatures/urban/bed_bug.htm>

AUTHORS: A. Murillo and A. Gerry (UC Riverside)

PUBLICATION DATE: 8 August 2016