



A lighter shade of pale?

If you are seeing light-colored bed bug fecal stains, here's why . . .

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Experienced pest management professionals (PMPs) know that fecal matter or fecal stains, the “calling cards” after a bloodmeal, are a clear indication of a bed bug infestation. In fact, they are one of the telltale signs searched for when conducting a bed bug inspection. For the most part, we recognize bed bug fecal stains as dark spots that may appear on a mattress, box spring, bed frame or other areas. But the porosity of the substrate upon which the fecal matter is deposited may affect the appearance of the fecal stain.

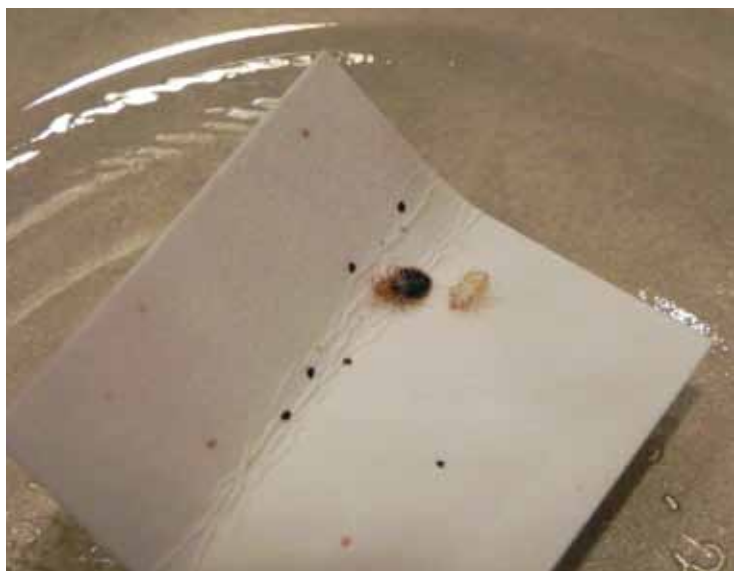
Generally speaking, the more porous the surface, the more the deposited liquid will spread, resulting in a broader stain. Liquid feces deposited on a non-porous or less porous surface, such as a metal bed frame, will be less broad or spread out. It may also appear taller, as a dried droplet. Overall fecal stain or deposit size may also be affected by the size and age of the individual bed bug that left the deposit. Additionally to this, fecal stains may vary in color.

The characteristic dark droppings are the result of digestion of the blood and evacuation of the waste, but not all deposits left behind will be dark. Those who work closely with bed bugs have observed pale, light-colored and even clear or translucent droppings.

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Louis Sorkin recalls visually examining infested sites, and wondering, “Is it possible that our common bed bug sorts the blood in its system and processes a volume of plasma prior to actual digestion?” This has been reported to occur in certain mosquito species.

However, he observed that unfed first-instar nymphs produce white, translucent droppings. The explanation is that clear droppings are metabolic waste. The dark fecal stains we typically see are the end product, voided from digested or partly digested blood that comprises



Here we see characteristic dark bed bug fecal stains, as well as the light, translucent fecal deposits discussed by the authors. Note that this third instar has just molted, and rests alongside the recently shed skin.

Photo courtesy of Paul Bello

the majority of the fecal droplets, or “ink marks,” characteristic of bed bug infestations.

The insect metabolizes nutrients and produces byproducts, one of which is uric acid. The first-instar nymph metabolizes nutrients gained from the yolk while in the egg stage, and ejects the waste without ever having fed on blood. Later-instar nymphs, plus the adults, metabolize imbibed blood and eject waste products, so pale droppings are produced in addition to the typical dark, digested blood. Dr. Robert Usinger, in his *Monograph of Cimicidae* (1966), referenced the Malpighian tubules (the organs involved with nitrogenous waste removal), but he didn't explain all forms of waste material beyond writing that fecal spots have been reported to vary in color from white to yellow, reddish brown, or dark brown to black. **PMP**

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