Louse

Importance

Louse (plural: lice) is the common name for members of over 3,000 species of wingless insects of the order Phthiraptera. They are obligate ectoparasites, which occur on all orders of birds and most orders of mammals. Most lice are scavengers, feeding on skin and other debris found on the host's body, but some species feed on sebaceous secretions and blood. Certain bloodsucking lice are significant vectors of disease agents.

Biology

Lice are tiny (2 – 4 mm long), elongated, soft-bodied, light-colored, wingless insects that are dorsoventrally flattened, with an angular ovoid head and a nine-segmented abdomen (Figure 1). Lice are being born as miniature versions of the adult, known as nymphs. Nymphs moult three times before reaching the adult form, usually within a month of hatching.

Figure 1: Body louse (*Pediculus humanus humanus*)

Rat lice

Rat lice (*Polyplax spinulosa*) occur worldwide and commonly infect the brown rat (*Rattus norvegicus*), and related species like the black rat (*Rattus rattus*). They are responsible, as a vector, for transmitting murine typhus from rat to rat.

Head lice

Head lice (*Pediculus humanus capitis*) infest humans and their infestations have been reported from all over the world. Normally, head lice infest a new host only by close contact between individuals. Head-to-head contact is by far the most common route of head lice transmission. Head lice are not known to be vectors of diseases.

Body lice

Body lice (*Pediculus humanus humanus*) infestations are found occasionally on homeless persons who do not have access to a change of clean clothes or facilities for bathing. Body lice are indistinguishable in appearance from the head lice, but they are adapted to lay eggs in clothing, rather than at hairs. Body lice are known to transmit louse-borne typhus, trench fever and louse-borne relapsing fever.

Pubic lice

Humans are the only known hosts of pubic lice (*Pthirus pubis*). They are typically found in pubic hair of humans, but may also live on other areas with coarse hair, including the eyelashes. Pubic lice are usually spread during sexual activity. However, they are not known to transmit disease organisms.

Lice control and prevention

Insecticidal dust is commonly used for rat lice control. One should seek medical advice on suspected infestation with lice on the body. Keeping personal and environmental hygiene at high standard are the bases for prevention of lice infestation.

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Rodent Repellents

In recent decades, a wide variety of rodent repellents have been researched, developed and marketed. They have been used for protecting properties or premises from rodent attack.

Common types of rodent repellents :

Ultrasonic devices

Ultrasonic devices are machines that generate sounds that are beyond human hearing (greater than 20kHz). Rats can hear sounds up to 100kHz and mice up to 90kHz. These devices emit various high frequency sound waves (over 20kHz) with random interval between signals which are inaudible to human but claim to irritate rodents and alter their normal activities and travelling routes.

Electromagnetic devices

Electromagnetic devices are sometimes confused with ultrasonic devices, but they are completely different. These devices are advertised to have irritating and repelling effects on rodents by producing magnetic field or distorting the earth's magnetic field. Some manufacturers market machines that have dual-purpose by combining both ultrasonic and electromagnetic effects.

Odour and Taste Repellents

Odour and taste repellents claim to contain chemicals that can prevent or stop rodents from gnawing by taste or odour or possibly by both. Some of these repellents also claim to contain powerful irritants which are offensive to rodent odour and hence can keep rodents away from treated areas.

Using rodent repellent in handling rodent problem might be considered by consumers as non-toxic, scientifically sound, more humane and convenient as compared to using rodenticides and rodent traps. Nevertheless, results of the reported tests on the efficacy of these products are inconclusive. Research that validates their rodent repellency effects in actual field conditions is also

lacking. Hence, consumers should be aware when purchasing these products as a means of rodent control. Once rodent activity is detected, disinfestations have to be initiated promptly at the relevant site rather than repelling the pest from the site. The most reliable means to prevent rodent infestation are elimination of its food supply, passage and harbourage.