HOUSEFLY-A MENACE FOR HUMANS

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***Abstract*: The most successful animals on the planet are the Arthropods. They have conquered land,sea and air and make up over three -fourths of all the currently known organisms i.e. over one million species in all. Among Arthropods, the most abundant and diverse group of organisms belongs to Class Insecta which includes mosquitoes, cockroaches, houseflies, spiders, butterflies, etc,.Housefly which belongs to Order Diptera causes more nuisance to humans than any other insect pest. Although they do not bite, they act as a vector for more than 100 pathogenic and dreadful diseases. Houseflies live in both urban and rural areas, especially where humans are present. The present paper focuses on the physical adaptations of a houseflies' body which help the fly to disseminate the pathogens and cause vector borne diseases in Humans. The houseflies were collected, preserved and then their body parts were observed for adaptations in its body.**

***Keywords*: Housefly, diseases, legs, wings, pathogens, transmission.**

Introduction: Although they do not bite, this species is a problematic pest as a vector for more than 100 serious pathogens (viruses, bacteria, fungi, protozoa, and nematodes), including those causing typhoid, cholera, salmonellosis, dysentery, tuberculosis, anthrax, and parasitic worms, carried to human food on the fly's body parts or in its regurgitations or defecations. Control of houseflies especially in poor countries with inadequate sewage facilities and sanitation is an important public health concern.House fly produces sticky substance which keeps the fly firmly attached to the ground (it acts like glue after landing).House fly relies mostly on the sense of smell when it searches for food. Sense of smell is located in the antennas.

House fly eats sugary liquids and different kinds of organic waste. All food needs to be turned into liquid before ingestion because fly does not have teeth and ability to chew food. House fly spits digestive juices on the food to decompose it before swallowing.House flies are carriers of numerous pathogenic bacteria. Gangrene, tuberculosis, dysentery, anthrax, plague and different types of poisoning are just some of diseases transmitted by flies.House flies defecate every couple of minutes. This is one of the factors that facilitate transmission of diseases.Due to their feeding and breeding habits (more on that later) house flies come into contact with a range of harmful bacteria such as Salmonella and E.coli. Because of this, house flies will often aid the spread of these bacteria passing them onto us by contaminating things, such as food and cooking utensils.house fly wings do not play an important role in mechanical transmission of bacteria suspended in a non-adhering liquid medium because of the low transfer rate of the bacteria to the wings and poor retention of bacteria on the wings during normal house fly activities.

Methodology: The flies were collected randomly and were preserved in 70% alcohol for some time. Different parts of the housefly were observed for any adaptations under the microscope.

Observations:

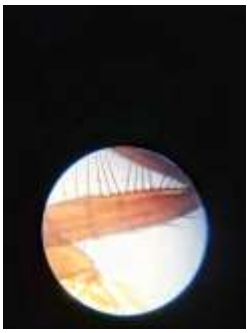

Fig .1 The legs of housefly were found

To be covered with stiff hairs

Fig.2 Housefly abdomen

Fig .3 Maggot of housefly

Fig .4 Pupa of Housefly

Fig.5 Forewing of Housefly

Result: The parts of the body of Housefly had many adaptations for the dissemination of diseases.

Conclusion: The legs and the body are covered with short and stiff hairs, called tenent hairs which secretes a sticky substance. The excrement of housefly has been found to contains microorganism, cyst and ova of intestinal parasites. By its habits of constant defecation, the houseflies spreads these diseases. Infection remains alive for 18 days in the fecesThey transmit this range due to their feeding and breeding habits. When a house fly feast upon an item of food infected with bacteria they accumulate the pathogen within their oesophagus or digestive system.

Due to a house flies feeding habit of regurgitating their stomach contents onto solid objects to liquify them, any bacteria living in their oesophagus will be transmitted to the item they are consuming. Similarly the bacteria living within their digestive system will be transmitted to items which they defecate on through their faeces. Areas where these products are found, the items themselves, as well as their preferred breeding sites, can often play host to the pathogens which cause the diseases. Because of this house flies can accumulate the bacteria on the tiny hairs on their legs and body. When a fly lands on a food product, or any other item, any pathogen which has attached itself to said hairs can easily be transmitted.

Another way that the housefly contaminates food is by rubbing its legs together. The whole body of the housefly, including claws and padded feet, is covered with bristles. Its tongue is coated with sticky glue. A fly rubs its legs together to clean itself. In the process of rubbing its legs, it rubs off scraps of some of the material that has gathered.Flies gather such germs from garbage and sewage, where they usually live and breed. The female lays about 100 eggs at a time and as many as 1000 during her lifetime. The eggs hatch into larvae in 12 to 30 hours.

Within a few days, the pupae become adults and the cycle begins again. Most houseflies have a lifespan of about 30 days during summer and longer when the weather is cooler. Cold weather usually kills off the adults, but larvae and pupae are able to survive the winter.The female housefly usually mates only once and stores the sperm for later use. She lays batches of about 100 eggs on decaying organic matter such as food waste, carrion, or faeces. These soon hatch into legless white larvae, known as maggots.

Generally, adult house flies live for 7 to 40 days, depending greatly upon the temperature, humidity, food availability, and other environmental conditions. Females begin laying eggs about 4-12 hours after pupal emergence..During the entire adult stage of the house fly life cycle, females are likely to lay 5-6 batches of about 75-150 eggs spread out over several days between each batch. During her typical lifespan an adult female may produce about 350-900 eggs. Quite prolific for an insect that only lives about 15-25 days as an adult. All these adaptations of a housefly allow it to transmit the diseases