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THE EFFECT OF PERFUME ON MOSQUITOES IN ASIA

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ABSTRACT

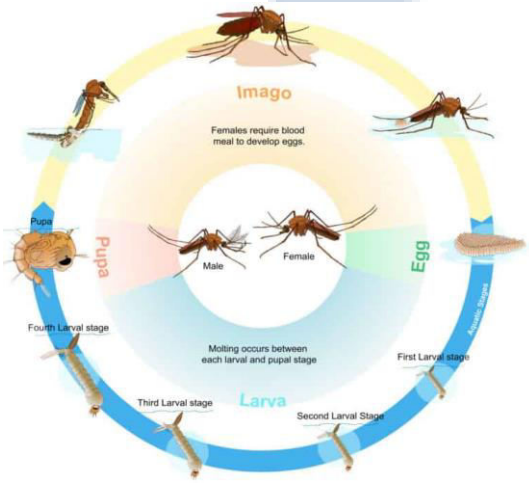
Mosquitoes are the parasites that can cause different diseases to humans and animals in Asia, for example, dengue, malaria, Japanese encephalitis, and Zika. Fragrance is the most commonly used mosquito repellent all over the world. This piece of work is exploring the available information on the ways perfume acts on mosquitoes in Asia, keeping in view their life cycle, epidemiology, and treatment. Besides, this article is also focused on the possible mechanisms and implications of the perfume on the behaviour and control of the mosquito.

Introduction:

Mosquitoes are transmitters of the germs becoming the cause of the maladies like dengue, malaria, Japanese encephalitis, and Zika in Asia. Mosquitoes are attracted towards their hosts by different means such as carbon dioxide, heat, moisture, and body odour. Fragrance changes the natural body odour of humans and animals. Perfume affects the mosquitoes, depending on the type, concentration, and composition of the perfume, as well as the species, sex, and physiological state of the mosquito. Some perfumes attract mosquitoes, while others act as repellents or confuse them. By exercising research on the effect of perfume on mosquitoes in Asia the plans for personal protection and vector control can be devised [1].

Life cycle:

Mosquitoes have four stages in their life cycle: egg, larva, pupa, and adult. The eggs are laid on or near water, where they hatch into larvae. The larvae feed on organic matter and breathe through tubes called siphons. The larvae are molted several times before transforming into pupae. The pupae do not feed but move actively in the water. The pupae emerge as adults, which fly away after their body parts harden. The adult mosquitoes feed on nectar and other plant juices, but only the females require a blood meal to produce eggs.



https://www.nemassmosquito.org/mosquitos/pages/mosquito-life-cycle

Epidemiology of mosquitoes in Asia:

Mosquitoes are distributed worldwide, except in Antarctica and some oceanic islands. They are most abundant and diverse in tropical and subtropical regions, where they can breed and transmit diseases year-round. Asia is one of the most affected regions by mosquito-borne diseases, such as dengue, malaria, Japanese encephalitis, and Zika. Dengue is the most widespread and rapidly increasing vector-borne disease in the world, with an estimated 68 000 clinical cases every year in 10 countries of the South-East Asia Region. Malaria is the main cause of death and disability in Asia, with more than 200 million cases and 400 000 deaths annually. Japanese encephalitis is a viral infection of the brain that occurs mainly in rural areas of Asia, with about 68,000 cases and 13,600 deaths every year. Zika is a viral infection that can cause birth defects and neurological complications in infants born to infected mothers [2].

Treatment:

Treatment of mosquito bites mainly depends upon the type of mosquitos and skin problems associated with lesions. first aid for mosquito bites is washing the affected area with soap and water using ice cubes, antihistaminic or anti-itching creams, baking soda, and oral drugs for effective control. Mostly in these cases, prevention is better than cure [5].

Conclusion:

Perfume is a powerful agent controlling the behaviour and ecology of mosquitoes in Asia, carrying different diseases to humans and animals. It can have either positive or negative effects on mosquitoes, according to the type, concentration, and composition of the perfume, along with the species, sex, and physiological state of the mosquito. Perfume can either attract or repel mosquitoes or interfere with their host-seeking and mating behaviour. The effect of perfume on mosquitoes in Asia can be manipulated for the personal protection and vector control and also for the epidemiology and transmission of mosquito-borne diseases. In addition to it research is needed to understand the mechanisms and consequences of perfume on mosquitoes in Asia, and to develop effective and safe perfumes that can prove helpful in preventing mosquito bites and diseases [4].

References

[1] Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences. 2001 Jul 29;356(1411):983-9.

[2] Hogerwerf L, Roof I, de Jong MJ, Dijkstra F, van der Hoek W. Animal sources for zoonotic transmission of psittacosis: a systematic review. BMC infectious diseases. 2020 Dec;20:1-4.

[3] Rahman MT, Sobur MA, Islam MS, Ievy S, Hossain MJ, El Zowalaty ME, Rahman AT, Ashour HM. Zoonotic diseases: etiology, impact, and control. Microorganisms. 2020 Sep 12;8(9):1405.

[4] Justice MJ, Dhillon P. Using the mouse to model human disease: increasing validity and reproducibility. Disease models & mechanisms. 2016 Feb 1;9(2):101-3.

[5] Nicoletti PL. Relationship between animal and human disease. InBrucellosis 2020 Jul 24 (pp. 41-51). crc Press.

[6] World Health Organization. The control of neglected zoonotic diseases: a route to poverty alleviation: report of a joint WHO. World Health Organization; 2006.

[7] Adam RD. The Giardia lamblia genome. International journal for parasitology. 2000 Apr 1;30(4):475-84.

[8] Robert T. Murrll K. &Mark S." Economic losses caused by food borne parasitic disease. Parasitol. Today. 1994;10:419-23.

[9] Bos R, Mills A. Financial and economic aspects of environmental management for vector control. Parasitology Today. 1987 Jan 1;3(5):160-3.

[10] Jones KE, Patel NG, Levy MA, Storeygard A, Balk D, Gittleman JL, Daszak P. Global trends in emerging infectious diseases. Nature. 2008 Feb;451(7181):990-3.

[11] Sarvi S, Daryani A, Sharif M, Rahimi MT, Kohansal MH, Mirshafiee S, Siyadatpanah A, Hosseini SA, Gholami S. Zoonotic intestinal parasites of carnivores: A systematic review in Iran. Veterinary world. 2018 Jan;11(1):58.

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