

## Evaluation of Mosquito Repellent Properties of *Ocimum* Species

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The use of natural products for pest control, particularly mosquitoes has appealed to the imagination of man for many centuries. One of the useful plants belonging to the genus *Ocimum* (family: Lamiaceae) is cultivated throughout tropical Asia for its medicinal and insecticidal properties. The objective of this study was to evaluate the repellent properties of *Ocimum gratissimum* (Mosquito plant) on mosquitoes and its commercial application.

Laboratory experiments were conducted to examine the repellent effect of raw powder and ether extract of *Ocimum gratissimum* as a protectant against mosquitoes. The repellent activity of these plant extracts was evaluated by counting the number of mosquitoes that settled on treated and on control compartments of an olfactometer. Ether extract of *Ocimum gratissimum* powder had repellent activity against mosquitoes and 4000 ppm showed the highest repellent activity lasting for more than 1 hour.

Mosquito coils were prepared incorporating different ratios of *Ocimum* powder, saw dust, *Litsea* powder. *Litsea* served as a binding material and saw dust in the mosquito coils considerably increased the period of burning. The other ingredients that enhanced the period of burning were cow dung, sambrani, and charcoal. Out of these three components charcoal was found to be the best. When cowdung was incorporated, the coils were infested with saprophytic fungus. Sambrani added coils, produced a desirable fragrance while burning, but produced unacceptable amount of fumes.

The best ratio of various materials to make the mosquito coils was obtained by trying different combinations of the components of the mixture. When Sambrani content is increased, with its overwhelming sweet fragrance it tends to mask the odour of *Ocimum* which plays a vital role in repelling mosquitoes.

Coils were made by substituting *Ocimum* powder with neem cake and citronella and compared the mosquito repellent properties with *Ocimum* mixture. It was found that *Ocimum* is superior to neem cake and citronella in repelling mosquitoes. The most effective composition of mosquito coils was 40% *Ocimum* powder, 22.5% saw dust, 22.5% *Litsea* powder and 15% charcoal.

*Ocimum* species seems to have a fair repellent effect on mosquitoes under tropical and subtropical conditions. *Ocimum* products can be mixed with other byproducts or with synergists to increase their efficacy, if necessary.