

Mosquitoes Control with Essential Oils

Introduction

Cloud Tech is End to End customized solutions company, we believe in nature, which provides solution for Odour, Mosquitoes and bug control system, Humidification control, Outdoor and Indoor cooling, Dust Suppression, etc. We are the only company in the world that uses Natural essential oils formulation which is non toxic, biodegradable, very safe for humans. The solution is not only efficacious but also the most economical solutions available in the world. People who like to remain healthy and are sensitive to the environment safeguards find refuge or partner with Cloud Tech.

Nowadays, vector and insect control is being done by 'Cell Penetration' technology, by use of chemicals. However, traditionally, the natives used natural plants and saps to repel the insects or kill them. The technology used was that of 'receptor binding' as opposed to 'cell penetration'. The basic advantage of receptor binding technology is that insects do not develop resistance, also the natural ingredients had a very short half life, apart from being non-toxic. Man in his ambitious stride for his prosperity stomped all the Natural derivatives and went on to synthesise formulations which are highly toxic and harmful to humanity and nature, apart from having a large half life. Polyethelene, Pyrethroids and Nicotinoids are examples of creations of ambitious human minds in search of great revolutionary profits at the cost of Nature.

We at Cloud Tech idealise Nature and promote only solutions which are derivatives of Nature, to control insects in the nature. We are with the best R & D company in India for getting extensively tested products in the field of Insect, Agri and Horti Pest control and Odour control field.

Detailed Justification

Mosquitoes can transmit more diseases than any other group of arthropods and affect million of people throughout the world. WHO has declared the mosquitoes as "public enemy number one". Mosquito borne diseases are prevalent in more than 100 countries across the world, infecting over 700,000,000 people every year globally and 40,000,000 of the Indian population. They act as a vector for most of the life threatening diseases like malaria, yellow fever, dengue fever, chikungunya fever, filariasis, encephalitis, West Nile

virus infection, etc., in almost all tropical and subtropical countries and many other parts of the world.

Most of the population in India have been spending a fortune on spraying chemicals and treating malaria and dengue cases however in spite of best of intentions rather than helping are but only making the next generation of the vectors immune to the chemicals applied, making the control even more difficult in the next season. These vectors take a heavy toll on human lives as also cost a heavy price on all facets. Not only the vectors, but also the conventional pesticides used to control these vectors cause many deaths and long term effects on the unsuspecting human beings, flora and fauna and the environment in general. Indiscriminate and uncontrolled use of the currently available pesticides to control mosquitoes, further adds to toxic wastes into the environment thereby poisoning those who have apparently been saved from the mosquitoes and mosquito borne disease.

The solution therefore is to go back to Mother Nature. CloudTech has rediscovered these in the form of natural essential oils, extracted, purified, and combined them to have a far greater efficacy than known and experienced before against the mosquitoes. These environmental sanitizers are environment friendly, target specific, which do not harm any other friendly bio-form in any manner, are nontoxic and, highly effective with no side effects. Working on the principal of the chemoreception these essential oil based products never generate resistance in the target pests.

Customization

Since, the requirements of every sector are different, we have the facility to custom make these systems and implement the specifications as provided by the customer. Our experienced technical staff will gladly guide you through the process of design, purchase and installation of a system for your particular application, be it commercial, industrial or residential.

We provide customization facility based on the following factors:

- ▶ Number of micronizers
- ▶ Width of micronizers
- ▶ Pressure of the pump
- ▶ Area to be covered

Technology

Cloud Tech using its special design for active screening can screen the commercial building House hold, gardens, open spaces ,Terraces by physically putting up a system of spraying equipment, which would automatically dispense a screen of non-toxic oil blend (SIE-20) around the building which would prevent the entry of Mosquitoes into the building and also most other insects like flies etc. This would also contain properties of non- toxic odour masking agents. It is done by single or multi stage belting of specialized Micronisers connected with high pressure nylon tubings, serviced by High Pressure Unidirectional Impeller system (HPUI). The active is emulsified in water and dispersed using this system. These systems are in use in various farm houses and five star hotels.

SIE-20, after extensive experimentation and rigorous trials in the most mosquito vector infested areas in India and having been confirmed totally safe and effective has already been introduced in India.

Essential Oils

Essential Oils are botanicals which are naturally occurring insecticides obtained from floral resources. Applications of Essential Oils in mosquito control were in use since the 1920s, but the discovery of synthetic insecticides such as DDT in 1939 side tracked the application of Essential Oils in mosquito control programme. After facing several problems due to injudicious and over application of synthetic insecticides in nature, re-focus on Essential Oils that are easily biodegradable and have no ill-effects on non-target organisms was appreciated. Since then, the search for new bioactive compounds from the plant kingdom and an effort to determine its structure and commercial production has been initiated. At present Essential Oils make upto 1 per cent of world's pesticide market.

Botanicals are basically secondary metabolites that serve as a means of defence mechanism of the plants to withstand the continuous selection pressure from herbivore predators and other environmental factors. A wide selection of plants from herbs, shrubs and large trees was used for extraction of mosquito toxins. Essential Oils were extracted either from the whole body of little herbs or from various parts like fruits, leaves, stems, barks, roots, etc., of larger plants or trees. In all cases where the most toxic substances were concentrated upon, found and extracted for mosquito control.

Application of Essential Oils as mosquito larvicide

The plant world comprises a rich untapped pool of Essential Oils that may be widely used in place of synthetic insecticides in mosquito control programme. Cloud Tech reviewed the efficacy of Essential Oils against mosquito larvae according to their chemical nature and described the mosquito larvicidal potentiality of several plant derived secondary materials, such as, Essential Oils. They also documented the isolation of several bioactive toxic principles from various plants and reported their toxicity against different mosquito species.

Mode of action of Essential Oils in target insect body

Generally the active toxic ingredients of plant extracts are secondary metabolites that are evolved to protect them from herbivores. The insects feed on these secondary metabolites potentially encountering toxic substances with relatively non-specific effects on a wide range of molecular targets. These targets range from proteins (enzymes, receptors, signalling molecules, ion-channels and structural proteins), nucleic acids, biomembranes, and other cellular components. This in turn, affects insect physiology in many different ways and at various receptor sites, the principal of which is abnormality in the nervous system (such as, in neurotransmitter synthesis, storage, release, binding, and re-uptake, receptor activation and function, enzymes involved in signal transduction pathway).

Cloud Tech Mosquitoes Control System

Cloud Tech Essential Oils are atomized as fine mist or vaporized and mitigate Mosquitoes residing in that area by air contact. Special equipment is required to atomize or vaporize the Cloud Tech essential Oils into the air, enabling the essential oil molecules to get in contact with mosquitoes. This may be applied in either indoor or outdoor application.

The Cloud Tech system injects a mixture of essential oils and water into the air (at 2%), since the liquid is atomized into billions of small water droplets, the water quickly evaporates leaving the product to attack the mosquitoes.



Conclusion

Today, environmental safety is considered to be of paramount importance. An insecticide does not need to cause high mortality on target organisms in order to be acceptable but should be eco-friendly in nature. Essential Oils may serve as these are relatively safe, inexpensive and readily available in many parts of the world. Several plants are used in traditional medicines for the mosquito larvicidal activities in many parts of the world. The use of essential oils against dangerous pesticides would reduce health effect on animals and human beings, dependence on expensive and imported products, and stimulate local efforts to enhance the public health system, bio-degradable and ecofriendly.

When you just wish to have enjoyments with your friends, kids or even close people you deserve it with comfort. You don't need to be at the mercy of mosquitoes, vectors and such other attackers. With Cloud Tech right at your side mosquitoes remain at bay. Mosquito control system disperses insecticides all through the day once installed. One of the distinctive advantages of Cloud Tech mosquito control system is that it also prevents the atmosphere from any vector born diseases.