GEM technology is a process of achieving **sustainable** mosquito control in an **eco friendly** manner at an **affordable or no cost** by providing artificial breeding grounds utilizing common household utensils and destroying the trapped larvae every week by non-hazardous natural means such as throwing them in dry places or feeding them to larvae eating fishes Gambussia Affinis, Ebites Reticulatus, Jewel-fish etc. or suffocating them by spreading a thin plastic sheet over the entire water surface sticking to the water surface to isolate atmospheric air.

**Contents**

1 FAQA
   1.1 Question & answer
   1.2 Q2
   1.3 Q3
   1.4 Q4
   1.5 Q5
   1.6 Q6
   1.7 Q7
   1.8 Q8
   1.9 Q9
   1.10 Q10
   1.11 Q11
   1.12 Q12
   1.13 Q13
   1.14 Q14
   1.15 Q15
   1.16 Q16
   1.17 Q17
   1.18 Q18

2 Have a question not answered above?
3 Main page

**FAQA**

If you have not visited **GEM mosquito control** page, please do!
Question 1 & answer

When the existing water bodies themselves give rise to severe mosquito menace, is it not likely that providing more facilities for the mosquito to lay eggs will worsen the problem?

**Ans.** No creature can produce more eggs or offspring just because more facility for laying or giving birth is available. (If it were so, how easy it would have been to increase the egg production of poultry!) Fact being so why should one think that mosquito has that ability? This fear is baseless.

Q2

Source reduction including elimination of water logging and avoidance of indiscriminate disposal of broken bottles & vessels, coconut shells, used tyres etc in open yards to prevent formation of micro water bodies by rain water are the measures suggested by Health Authorities through their pamphlets & newspaper ads. What GEM Technology proposes is just contrary to this. How can you be right then? Are not the experts including WHO more likely to be correct?

**Ans.** Avoidance of water-logging is impractical and useless. It has been recorded that mosquito lay eggs in stagnant water, running water, brackish water and in dry places as well! Is it possible to dry up or close down all the wells, ponds, rivers, streams, paddy fields, dams, lakes etc? (Even if possible, how to overcome the environmental damage it will impart). We can eliminate breeding in flower vases, fridge, a/c, room cooler & flower pot drainage trays, etc. How to avoid breeding in rain water collected on cactus & plantain plants, the dip at branch and trunk joint of large trees, in the holes made by bumble bee & wood pecker on old trees and in the foot prints of animals & humans on wet soil during rainy season? It has been read (in the print version of Encyclopedia Britannica) during the 1990's that eggs laid in dry places remain intact for long periods and hatch in rain water during next season! Can we stop the rain? It is true that indiscriminately thrown containers can act as breeding places for mosquito. GEM Tech is different. In this we destroy wrigglers every week; do not allow them to mature into imago. Lack of water body to lay does not in any way impair the formation or maturing of egg in mosquitoes. If it were true or possible, how easy it would have been to control human population growth. Increasing Poultry-egg production also would not have been a problem.

Q3

What is the guarantee that all mosquitoes will locate the containers we provide and lay egg in them?

**Ans.** As female mosquito can't avoid blood meal, they are sure to visit our dwellings. After the meal they relax in cool dark places. When the time for laying approach, their search for water bodies start from our house. They locate a water body by sensing the temperature difference existing around it. Some of them will lock on to closet water & lay in that. Remaining ones go out & continue their search. Then since the artificial water bodies provided are near the house, some mosquitoes do locate them and lay in them before they notice other natural ones. (Whoever have tried this out, have same experience as well.) Later on mosquitoes locate the water body much easily due to the presence of pheromone that gets dropped in the water along with eggs & acts as an extra attractant. There is no guarantee that all mosquitoes will lay in these artificial breeding grounds. That is not expected also. But all the same, a very strong guarantee is given by none other than The WHO through their (and their Indian counter parts') publications! They say that indiscriminately thrown bottles, vessels, coconut shells & used tyres will collect rain water and will become breeding places of mosquitoes! If mosquito will locate water collected in an indiscriminately thrown vessel, why anyone should think that they will not locate the water provided by us?
Eggs laid in closet reach the septic tank with next flushing. There they hatch, grow & mature into mosquito. By plugging all the wholes and gaps if any on the septic tank and by covering the cowl for the fowl gas escape, we can ensure that no mosquito from the tank gets freed into open atmosphere. They face premature death due to starvation in a week.

Q4

Experts allege that while pouring down the water to destroy larvae & pupae, the eggs that stick on to the edges will get dropped down, remain intact for a year or so, hatch in rain water & produce dangerous mosquitoes. Is this not a dangerous side effect of GEM Technology?

Ans. The mosquito that locates water in the container lay eggs not on the edge of the container but in the water (to be precise on the upper meniscus formed by surface tension) or on the wet/moist surface of floating objects. Hence an egg, as soon as it is laid, comes in contact with water & the hatching process gets initiated. Such eggs even if fall down cannot remain intact any longer. The egg will die and get decayed. The eggs that are laid by mosquito in dry place initially itself are the ones which can remain intact till they come in contact with water later on. Just because eggs remain for long periods before hatching or because they hatch in rain water, the mosquitoes emerging out of them do not acquire any special qualities. Mosquitoes are even otherwise dangerous. GEM Technology does not have any undesirable side effects.

Q5

If one forgets to destroy the wrigglers in the artificial water bodies in time will they not mature into adulthood and worsen the problem instead of solving it?

Ans. No. 1 week is the minimum time required for an egg to mature into imago. Maximum time extends up to 21 days. A delay of 2-3 days in destroying them is not likely to allow them to become mosquito. Even if they become mosquito what happens is only a shift of location. Had we not provided these water bodies those eggs laid in them would have been laid in some other natural water body somewhere else and would have become mosquitoes and spread around. No one forgets to do things one consider important. If one forgets to destroy larvae in time, reason is obvious. (None forgets pay day even though it occurs only once/twice a month! None forgets money lent to someone. … …) The facts that mosquito is considered the largest killer of human history, that it is the public health enemy number 1, that millions die of Malaria alone every year world over, that mosquito borne diseases break out every year without fail in all the endemic countries, that the loss of some countries due to Malaria alone is to the tune of 1% their GDP etc are sufficient reasons to make one realize that mosquito destruction is an important matter, I feel. More over this is not a perennial activity, in a matter of 2-3 months of concerted effort we can contain the menace once for all. Periodicity of 1 week is chosen for ease of remembering & to avoid possibility of forgetting it. Do it on your weekly off day.

Q6

When so many wells, ponds, drainages, lakes & rivers etc exist all around what difference a few small pots are going to make?

Ans. Its indubitable that in comparison with the existing water bodies (in surface area as well as in volume) the artificial water bodies that we provide are very small. But the fact is that a mosquito searching water for laying does it in the first available site irrespective of its size. Even if there are larger water bodies in the proximity of the house, the artificial micro water bodies being closer almost all the mosquitoes that reach the house for feeding invariably lay in them. Thus existing other large or small water bodies does not affect the functioning of GEM Tech in any way.
Q7

As mosquitoes can fly long distances even if we destroy the mosquitoes of our house will they not come from other houses to ours?

Ans. (a) Even though they can fly 100s of kilometers they don't leave a premise if prey for feeding and water for laying is available there.

(b) You must have noted that in GEM Tech nothing is done to destroy the existing mosquitoes of our house. We are leaving them for natural death as this will happen in 4 to 6 weeks time. What GEM Tech does is preventing those mosquitoes which have reached our house for feeding from going to water bodies outside our premise for laying & making them lay in the traps in our courtyard so that we can destroy the future generations easily and in large nos. By this we are reducing the number of eggs that would have been laid in other water bodies which we might not have even seen so far! Subsequently the no. of larvae & pupae in existing breeding places & imago emerging out of them gets reduced. Due to this the no. of mosquitoes that spread in the surroundings of the breeding ground comes down. This results in reduction of no. of mosquitoes that reach our house as well as our neighbor's house. This means that when the no. of mosquitoes of our house come down that of our neighbor's neither remain same nor increases but reduces simultaneously. Hence the question does not arise.

Q8

How can one get oneself convinced that this small little silly trick will contain the mega problem while the century long efforts of WHO & all other public health workers world over could not attain it in spite of harnessing most modern powerful technologies & trained manpower?

Ans. (a) In the so called most modern technologies what are used to kill wrigglers pupae & imago are manmade chemical insecticides. As they spread in air or water gets diluted & lose hitting power. This enables these creatures to live even with the presence of insecticide in their body which eventually produces resistance against it in a few generations over a few years. Since the life cycle duration of mosquito is less than a month, they could acquire resistance even in a few months time. Then any strength of those insecticides will not affect them. In order to harness the modern technology one has to locate the breeding ground. Once insecticide or larvicide is applied in a water body no mosquito will come to lay eggs there as long as its odor is present there. This does not imply that mosquitoes stop laying eggs! They find out fresh spot & perform the task of breeding! And we relax in fool's paradise. These are the reasons why modern technologies fail miserably and WHO had to withdraw its stand & lift the ban on usage of DDT. The small little silly GEM Technology does not have such handicaps. More over it exploits the weaknesses & limitations of mosquito, devised & embedded by the GREAT DESIGNER DEVELOPER in its life cycle so that it will be available where ever mosquito is present and anyone can harness it when required. The GEM Tech is small little & appears to be silly because it is GOD given. Same is the reason why mosquito can not defend, bye-pass or defeat it! (b) All those who have tried this out have experienced its efficacy. You also might have come across their testimonies in news papers, but won't have cared probably.

Q9

On what ground is it claimed that in 2-3 months time mosquito menace will come under control?

Ans. At all places where GEM Tech was implemented there was significant reduction in the problem. When the time limit repeated at several places it was felt that there must be a scientific reason behind it. Counting the larvae destroyed every week revealed that it's around 100 per week. So in 2-3 months (8-12 weeks) time reduction is 800-1200. Out of it half (50) is likely
to be males. So the no. of female mosquitoes being destroyed in that period came down to 400-600. This no. in comparison to the lakhs that spread in an area is obviously insignificant. An analysis of the facts related to its reproduction gave some insight. Egg hatches in 2-3 days, larva phase lasts 3-14 days & pupa phase takes 2-7 days. That means egg takes 7-24 days to mature into mosquito. In another 7 days it starts laying eggs. So in 14-31 days an egg produces another egg. That is, even in the most unfavourable condition a new generation of mosquito gets produced in a month. They produce 100 to 300 eggs (species dependant) during their short reproductive span of 3-5 weeks. That means in 1 month each female mosquito produces a minimum of 100 others. 50 of them are likely to be females. Had the 50 female larvae been not destroyed during the first week of implementation, in 2-4 weeks they would have produced a fresh generation of 50 each. It being 50x50=2500. In another 2-4 weeks a second generation of 50 each (being 2500x50=125,000) also would have been existed. Hence by this process we have blocked the birth of 125,000 mosquitoes in a locality in a period of 2 months. During the same period all the mosquitoes that were existing at the beginning of the project would have had natural death as its life span does not extend beyond 6 weeks. All the eggs larva & pupae of near by water bodies also would have matured into mosquitoes and had their natural death during the same period. It is the simultaneous occurrence of these things (blocking of the birth of 125,000 mosquitoes & natural death of existing ones due to ageing) that result in the steep and unbelievable reduction in the mosquito problem of the project area.

Q10

Will they not continue to get produced at the existing natural breeding places and retain the problem on and on?

Ans. No, mosquito cannot complete its life cycle with the help of water body alone. In order to have its egg complete the genetic growth mother mosquito must have had a blood meal from a warm blooded creature. Else those eggs will not hatch. As hunger & reproductive requirement act simultaneously mosquito can neither resist nor ignore the thirst for blood. They will certainly come to us for blood meal. As they do not prefer to fly far with full stomach choose to stay around and their search for water to lay eggs begin there and gets locked on to the artificial water bodies (traps) provided by us. Hence the no. of eggs getting laid in existing breeding places come down gradually and so the no. of mosquitoes emerging from them also reduce; it is neither retained nor increased.

Q11

If such a simple mosquito control method were possible why did no one else especially the westerners did not find it out so far?

Ans. The question clearly brings out the prejudice of a Keralite towards his fellow Keralites that the propounder being a malayalle what he says cannot be right and good & novel ideas will originate only in the minds of white skinned people. God Almighty has not delegated the complete rights of original ideas to anybody exclusively. Indians also have made valuable contributions to humanity in science, mathematics, medicine, etc.

Q12

Does mosquito have any place in the food chain of Nature? If they are eradicated will it not harm the environment?

Ans. This question is indicative of the potential of this method. Mosquito has a place in the food chain. It is the food of Dragon fly. Dragon fly's offspring (NYMPH) during its life in water feeds on mosquito larvae (WRIGGLERS). Some very small migratory birds while passing through cities are known to feed on mosquitoes (news paper reports). There are parasites living on wrigglers. GEM Technology can be discontinued any time to allow further growth & there by avoid a shock to environment.
Q13

We see mosquito as enemy # 1. Does it not have any good aspects?

Ans. (a) It is male mosquito that pollinates orchid flowers. Larger ones like butter fly, bumble bee, honey bee etc. cannot access pollen grains in orchid flowers & help pollination. The delay in pollination is supposed to be the reason why orchid flowers stay bloom longer. (b) Mosquito performs a very important task for God. Diseases are the examinations conducted by God Almighty to eliminate weak people (unworthy of retention according to HIM) and there by maintaining the overall health level of mankind. Mosquito is a main invigilator in that exam who distributes the viruses & other germs which play the role of questions. As far as God/Nature is concerned this is a good aspect though not so for us! (c) If we think in a lighter way we can see that mosquito performs another good task. It helps people who work during night hours to keep awake. (d) If a mosquito that bites is not infected, one can take some advantage out of it, it appears. The first thing a mosquito does after biting is to inject its saliva in to the pray to avoid blood clotting. Then some people get itching. If we disturb, it will fly off for the time being. The saliva will remain in our blood and may help avoid problems due to clotting. After some time same mosquito will return for another bite. Mosquitoes bred in controlled & protected environment free of germs can probably be used to develop a therapy. Such safe leeches are known to be used to extract fowl blood from human eye. (e) Many of the mosquito-borne disease are extremely fatal. If they had the ability to spread through water air or physical contact human race would have been wiped out from the face of earth much earlier. It didn’t happen so far only because the germs have the limitation that they have to be routed through mosquito to man. For some germs like the plasmodium, which causes Malaria, mosquito is a vector. One stage in the life cycle of plasmodium is getting completed in the belly of Anopheles mosquito only. That means mosquito is actually restricting or controlling the free and fast spreading of those fatal diseases. Is it not a good thing?

Q14

Does mosquito spread HIV-AIDS? If not, why?

Ans. (a) No, mosquito does not spread HIV-AIDS. They can survive & multiply in blood only. Blood containing AIDS virus goes into the stomach of mosquito and gets digested there. If the virus reaches our stomach, then also it will be digested. It will neither survive nor multiply – unless they are lucky enough to enter our blood stream through some micro cracks. (b)When God created mosquito (or for that matter any other creature) HE has assigned specific duties to each of them. (eg. some Anopheles species like Stephensi to spread Malaria, Aedes aegypti to spread Dengue fever, Chikun guniya & Yellow fever, some Culex species to spread Filariasis & Meninjo encephalitis etc, Dragon fly to eat mosquito, Nymph (the offspring of dragon fly) to feed on larvae of mosquito and so on). Likewise HE created the pathogens such that they can survive the digestive process of their carriers, receptors & vectors. When we drink raw well water lots of micro organisms enter our stomach. But except those which cause diseases like cholera, jaundice, typhoid etc all others succumb to the digestive process

Q15

Medical experts & health ministers say that the mosquito borne disease chikun guniya is non fatal. But during the latter half of 2006 when it affected Kerala (one of the states of India), nearly 200 victims lost their lives. How do you explain this?

Ans. The experts are right; chikun guniya is a non fatal disease. That's why in spite of affecting more than 60,000 people spread over all the 14 districts, only 200 died. But, why even that, is the million dollar question!

Nearly 50,000 of the cases were concentrated in the Cherthala taluk of Alappuzha district. It affected all sections of the society – young & old, rich & poor, male & female, weak & strong & brought the social life to a standstill! But all those who
succeeded to it were reported to be having some other ailments prior to & during chikungunya phase.

Now the question is: why then others with similar ailments, age group & social or environmental conditions & not having contracted chikungunya continue to be alive there & elsewhere? The explanation that can be offered is that the simultaneous existence of chikungunya & other ailments must have resulted in a negative synergy which dragged down the health below the threshold for sustaining life & there by succumbing to the illness.

Q16

It is Mosquito that troubles, not larva or pupa. Have you any solution for THAT?

Ans.

(a) Today's Mosquito was Pupa 2-3 days ago & Larva a few more days ago. Hence if you begin destroying Pupa & Larva now, in a few days time Mosquito population will begin diminishing as older ones die every day & fresh one cease to emerge due to destruction of Larvae & Pupae.

(b) Adult Mosquito (imago) also can be trapped & destroyed.

Get some earthenware with small mouth. Put some soil/sand/grains at the bottom & pour a little water just sufficient to keep it moist/wet and keep the vessel out in the open during night. As the sun begin to illuminate & heat the atmosphere, Mosquitoes start looking for cool dark place to relax & sleep. They land up & take shelter in the earthenware we have kept as it's interior is dark & cool. Now what remains is to destroy the trapped ones. Just close it's mouth with a cloth or palm and shake it vigorously such that the hard particles fly inside zigzag & destroy the trapped Mosquitoes. Repeat this widely & regularly till the Mosquito population falls below the vectorial threshold or till life is comfortable without Mosquito repellents.

Q17

Water bodies attract mosquitoes. Hence, is not the statement "providing water bodies around human dwellings will not only retain the mosquito menace but also worsen it" logical? (This question has come from the state chapter of an international organisation of professionals ALSO.)

Ans.

It is true and well known that uncovered waterbodies do attract mosquitoes. Moreover in GEM technology it is done for that purpose intentionally and not out of ignorance about it.

The aspects left out by the interrogators (probably) are:

1. Mosquitoes search for water bodies when they have the urge to lay eggs.
2. They come to us (or any warm blooded creature for that matter) when they are hungry.
3. Hence one need not worry about the "GEM Technology" water bodies attracting feeding mosquitoes and causing menace to the people.

At feeding time they search warmer location and at breeding time cooler ones.

Q18

Out of all the mosquito born diseases which is the most serious one?
Ans.

Till 2016 ADE I was knowing a dozen of diseases spread by mosquitoes. But afterwards I know 13 of them.

13 is considered to be an inauspicious number by some people. Whatever it be the 13th illness spread by mosquito is the most serious/dangerous/inauspicious one, in my opinion.

The reason is that it affects the coming generation also while the previous ones affect only the victim!

Name of the illness is Zika fever.

A pregnant Zika fever patient will give birth to a Microcephalic baby. This is what makes Zika fever the most serious mosquito-born disease.

Microcephaly is a state of brain being shrunk to a useless lump of matter. The individual will not sit, talk, ... ... .
Now there's evidence that Zika can lead to birth defects

Researchers think Zika might be behind the rise of “microcephaly”

A birth defect that is associated with a small head and incomplete brain development in newborns
The vector that transmit Zika virus is none other than the dreaded & spotted 24X7 biter *Aedes* mosquito which played havoc with Chikun Guniya & Dengue Fever during recent years.

It's almost two years since Zika was reported in Delhi and confirmed by WHO.

**Have a question not answered above?**

If you have more questions not yet answered above, please feel free to ask. Use the link "Discussion" at top or bottom left of this page, click the bottom most "edit" link there, type in the questions & post by the "Save page" link.

**Main page**

If you have not visited GEM mosquito control page, please do!