Mosquito Larva behavior pattern and a layman version of cold-fry self-moving aquatic particles as models for futuristic larval robots

Sriram Kannan[1], Deblina Mitra[2], Sreevani Kannan[3], Anierudhe Venkatavaradhan[4], Shashank Venkatavaradhan[5]
Corresponding author: Sriram Kannan, sriram.kannan2023@gmail.com

1-Sriram Kannan, Project Scientist, Indian Council of Medical Research, Delhi
2- Deblina Mitra, School Faculty, TIS
2- Associate Professor, Department of Physics, Panimalar Engineering College- Chennai
4- Student Alumini, M Tech Biotechnology, B S Abdur Rahman Crescent Engineering College, Chennai
5- Student, B Tech Mechatronics Engineering, SRM Institute of Science and Technology, Chennai

Data

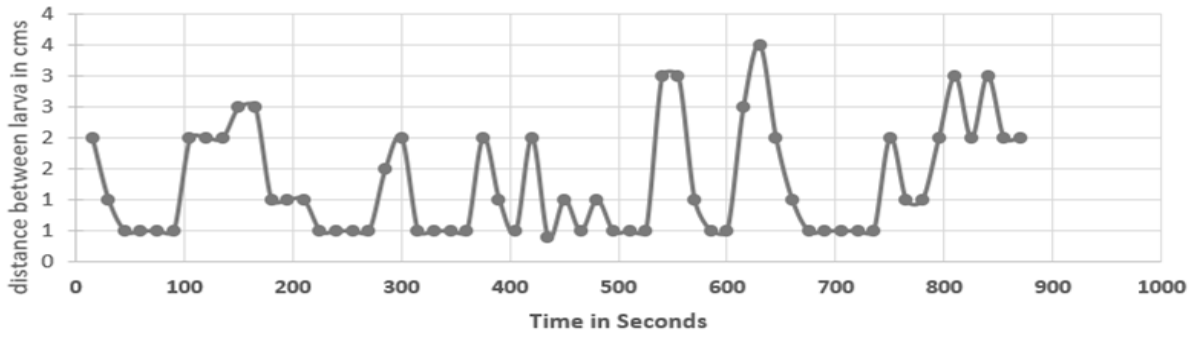
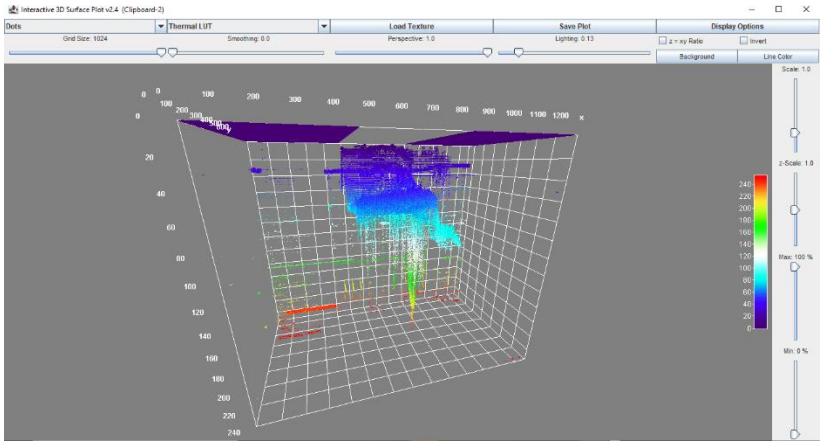


Figure Time distance plot between 2 mosquito larvae in a plastic container observed for 15'- the video link is given herewith. Video

It was observed that when 2 mosquito larvae were introduced in a plastic container as shown in figure 1 and its movement observed for 15', it was noted that the two larvae tend to come in contact with each other now and then and don't tend to go away from one another. Such behavioural pattern could be useful to design larval robots to dispense biocontrol bacteria.

To create a layman version of self-moving particle in water that can attract larvae, a mix of wheat flour (5 tsp), Eno (0.25 tsp) that has sodium carbonate, Sodium bi carbonate and citric acid, mustard oil (0.5tsp) was kneaded with water to make dough tablets. This could be mixed with commercially available *Bacillus thuringiensis* or larva killed by B.Ti and when dropped in water the dough releases smaller particles due to the reaction of water with the salt leading to dispersal of the biocontrol agent. (Video). The figure shows particle distribution in water. Since it looks like a object being oil fried, it is nick named as cold fry.