



天然矽片 蚊蟲驅趕

NSP mosquito
repellant



沒有蚊子的後院早餐



德州Austin夏天蚊子很多，早晚後院10分鐘就會被咬得又紅又腫又癢。請人噴化學藥劑隔週一次要200 US\$，既不環保又貴又不一定有效。

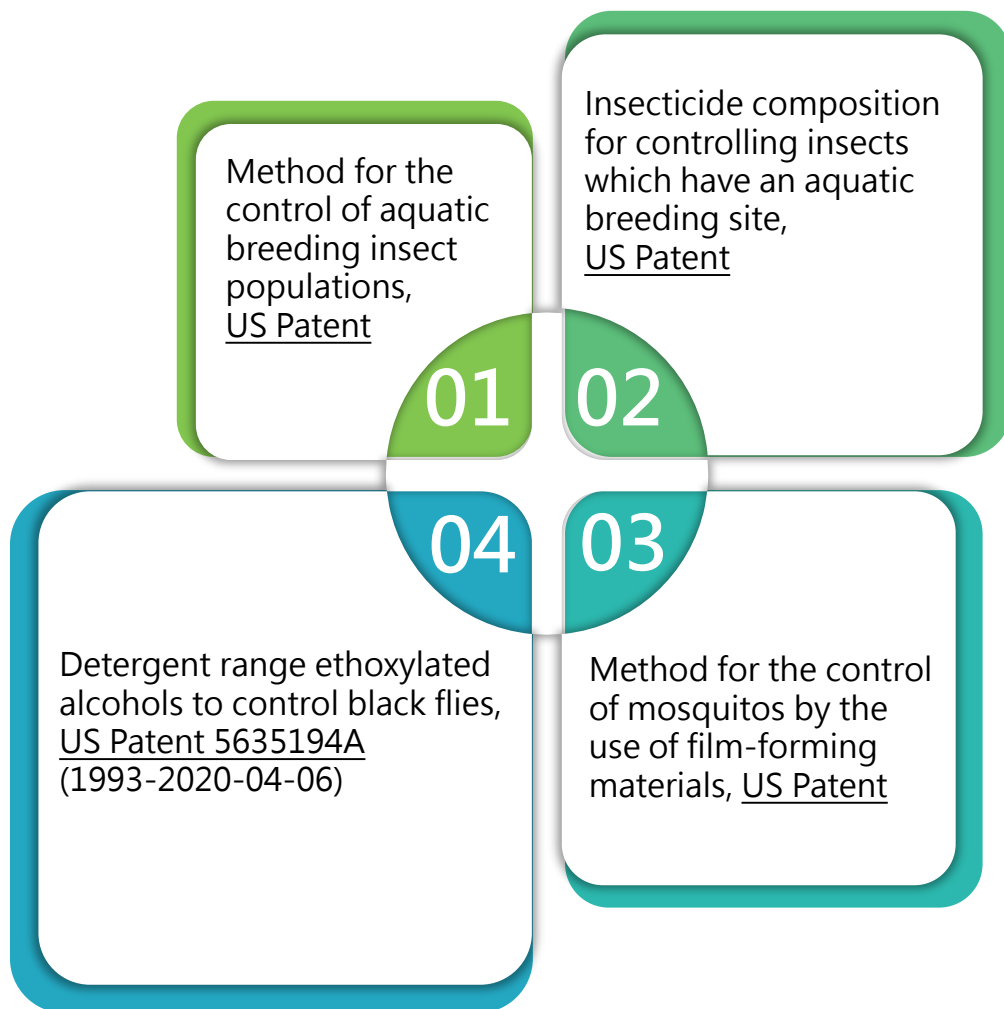
我發明的NSP，它無毒性又對草皮樹木菜園都長得好。我示範一下，自己跟孫子一起噴只一次1000ppm。隔天我就可以在後院吃早餐了。效果比我預期好。主要是氣味消失蚊蟲就不來了！

2021-6 Austin



[天然矽片] 參與大自然界運作的機制

References: Shell's Patents



- ◆ --矽片高表面積可覆蓋蚊子卵的表面, “物理阻斷”其孵化 (非化學反應/無環境毒性)
- ◆ 非離子型界面活性劑(Shell 舊專利)--可以在水面產生薄膜, 進而阻斷蚊子孵化繁殖

The teachings from old patents --:

- In 1990' s, Shell filed several patents revealing the common surfactant is effective for controlling mosquito reproduction. The story was told that, the surfactant plant' s workers “observed” the phenomenon of less mosquito found nearby their factory of manufacturing the non-ionic surfactants, while none of toxicity to the environment by watching the life of alive crocodiles in the ditches around the plant). They decided to file a patent. So, serendipity strikes again.
- Although being ignored for these findings, the time goes by decades, I included non-ionic surfactants in NSP works when using in my NSP works in low attention paid to this patent afterwards, in the NSP work, I included the non-ionic surfactant in the formulation for anti-mosquito and anti-dengue works in 2010' s.

[Natural Clay Nanoplatelets] physically adsorbing gaseous odor mechanism

References: Shell's Patents

Method for the control of aquatic breeding insect populations, US Patent

01

Insecticide composition for controlling insects which have an aquatic breeding site, US Patent

02

Detergent range ethoxylated alcohols to control black flies, US Patent 5635194A (1993-2020-04-06)

04

Method for the control of mosquitos by the use of film-forming materials, US Patent

03

◆ NSP high surface area for adsorption of gaseous odors

◆ Formulated with environmentally friendly surfactants for stopping mosquito threats

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「天然矽片」產品 (環境友善) 系列驅趕蚊蟲原理佐證



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***Aedes aegypti* mosquitoes detect acidic volatiles found in human odor using the IR8a pathway**

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Summary

Mosquitoes use olfaction as a primary means of detecting their hosts. Previously, the functional ablation of a family of *Aedes aegypti* olfactory receptors, the Odorant Receptors (ORs), was not sufficient to reduce host-seeking in the presence of carbon dioxide (CO₂). This suggests the olfactory receptors that remain, such as the Ionotropic Receptors (IRs), could play a significant role in host detection. To test this, we disrupted the *Ir8a* co-receptor in *Ae. aegypti* using CRISPR/Cas9. We found that *Ir8a* mutant female mosquitoes are not attracted to lactic acid, a behaviorally active component of human sweat, and lack odor-evoked responses to acidic volatiles. The loss of *Ir8a* reduces mosquito attraction to humans and their odor. We show that the CO₂-detection pathway is necessary but not sufficient for IR8a to detect human odor. Our study reveals that the IR8a pathway is crucial for an anthropophilic vector mosquito to effectively seek hosts.

其一 (即時性)

蚊子必須尋找血粉 (蚊子對人類的“叮咬”) 及水源來繁殖；然而，他們的視力很差，而是用氣味來尋找下一頓飯。

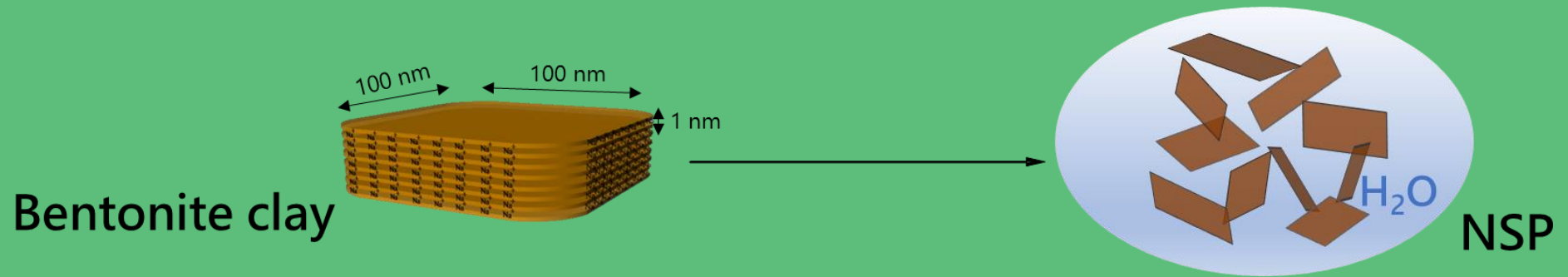
蚊子的觸角和嘴部有非常敏感的小毛 (稱為感器)。這些毛髮具有氣味受體，可幫助蚊子區分和選擇宿主。

蚊子的 Ionotropic Receptor 8a (IR8a) 嗅覺輔助受體，為蚊子尋找目標宿主的關鍵受體。因此，“氣味”為蚊子尋找宿主的關鍵。而矽片具有吸附氣味的效果，可使得子無法辨識宿主方向。(佐證: Shell 1990 專利controlling the mosquito's breeding)

其二 (長時性)

矽片改變水面之界面張力，導致蚊子不會選擇在此水源產卵，再加上矽片具有包覆蟲卵之功效，進而阻斷蚊子繁衍。

「天然矽片」產品 (外觀)



NSP (膠體狀態)



NSP (清水稀釋後)



內含影片，請點入

