

CHEAP WEAPON AGAINST THE CORAL-KILLER STARFISH FOUND

Scientists have stumbled upon an effective way to halt the advance of destructive crown-of-thorns starfish, which feed upon coral reefs in the Indo-Pacific region, causing them severe damage and death.

An international research team from the Australian Research Council's Centre of Excellence for Coral Reef Studies (CoERS) at James Cook University, Australia, reports that a protein mixture, commonly used to grow bacteria in laboratories, could destroy starfish in as little as one day.

The protein mixture works in two ways, Jairo Rivera Posada, one of the researchers on the team, tells *SciDev.Net*. The proteins induce a strong allergic reaction in starfish, leading to their death. They also stimulate the growth of *Vibrio* bacteria, which live inside the starfish: provided with the right conditions to bloom by the protein mixture, the bacteria attack their hosts and help destroy them.

Furthermore, the *Vibrio* bacteria can also spread from an infected starfish to those with whom it has close contact. Potentially, this could mean 500 starfish could be

killed with a single injection of the protein mix a vastly more effective and efficient rate than that of current control methods.

A starfish outbreak can destroy up to 90 per cent of a reef's corals. The recent outbreak at the Great Barrier Reef, off the coast of Australia, has already destroyed 42 per cent of the reef.

Although the causes of these starfish outbreaks are still being debated, scientists believe they occur because of an increase in terrestrial runoff from agriculture and industry. This results in a growth in phytoplankton, a food source for starfish larvae.

Currently, controlling these outbreaks involves injecting each starfish with sodium bisulphate, an acid salt that is deadly to starfish but harmless to other marine life. This method is very costly, time-consuming and labour intensive.

Posada describes the new method as a promising finding that should be further tested as an outbreak control method because these protein extracts offer great advantages when compared to actual [current] poisons used.

Only low concentrations are required to induce death in starfish (10 grams compared to the 140 grams of sodium bisulphate required), Posada explained.

But he added that the team have yet to determine whether there are adverse effects on other marine life, as well as the overall environment.

Ciemon Caballes, a marine biologist from the University of Guam, in Guam, a US territory in the Pacific, has been working with Posada to explore different options for controlling starfish.

He told *SciDev.Net* that together they are organising new experiments to test the new control method's safety.

Edgardo Gomez, founding director of the Marine Science Institute at the University of the Philippines, emphasised the need to reduce population pressure in coastal areas near reefs, and to curb siltation and pollution of the region's waters, to prevent starfish outbreaks and protect corals.

Establishing marine protected areas and science-based coral reef rehabilitation or restoration activities was also important

Source: <http://www.scidev.net/global/biodiversity/news/cheap-weapon-against-the-coral-killer-starfish-found.html>