

Vinegar offers hope in Barrier Reef starfish battle

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A diver injects a crown-of-thorns starfish with vinegar on the Great Barrier Reef in the hopes of culling the predatory pest, which consumes coral faster than it can be regenerated

Coral-munching crown-of-thorns starfish can be safely killed by common household vinegar, scientists revealed Thursday in a discovery

that offers hope for Australia's struggling Great Barrier Reef.

The predatory starfish is naturally-occurring but has proliferated due to pollution and run-off at the World Heritage-listed ecosystem, which is also reeling from two consecutive years of mass coral bleaching.

Until now other expensive chemicals such as bile salts have been used to try and eradicate the pest—which consumes coral faster than it can be regenerated—but they can harm other marine organisms.

Tests by James Cook University, in collaboration with the Great Barrier Reef Marine Park Authority (GBRMPA), showed vinegar was safe, effective and cheap.

Study head Lisa Bostrom-Einarsson said crown-of-thorns were injected with vinegar at four sites on the [reef](#) over six weeks, causing them to die within 48 hours with no impact on other life.

"We recorded live coral cover, abundance of coral disease, fish abundance and diversity, fish diseases and the abundance of closely related invertebrates before, during and after the six-week study period and found no detrimental effects," she said.

Keeping crown-of-thorns under control however is a tough ask, with dive teams needing to individually inject each starfish before it dies and breaks-up.

The crown-of-thorns starfish

Coral-destroying starfish has proliferated in recent years at the Great Barrier Reef

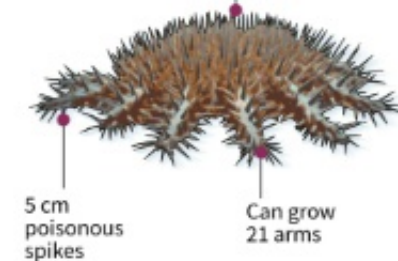


Source : Marine Geology/Deepreef.org

Crown-of-thorns starfish

Acanthaster planci

Up to 80 cm diameter



Feeds on corals by spreading its stomach over them and dissolving polyps with digestive juices

- ▶ A natural predator of coral, an individual can eat 5-6 sq m a year
- ▶ Population periodically explodes to devastating effect
- ▶ One female can produce 65 million eggs per breeding season
- ▶ Present throughout Indo-Pacific

Tests have shown that injecting them with vinegar can safely kill them

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A diver injects a crown-of-thorns starfish with vinegar on the Great Barrier Reef in the hopes of culling the predatory pest, which consumes coral faster than it can be regenerated

But despite the labour-intensive job, it is far more efficient than extracting them from the water before killing them.

A major study of the reef's health published in 2012 showed cover had halved over the past 27 years and attributed 42 percent of the damage to crown-of-thorns starfish.

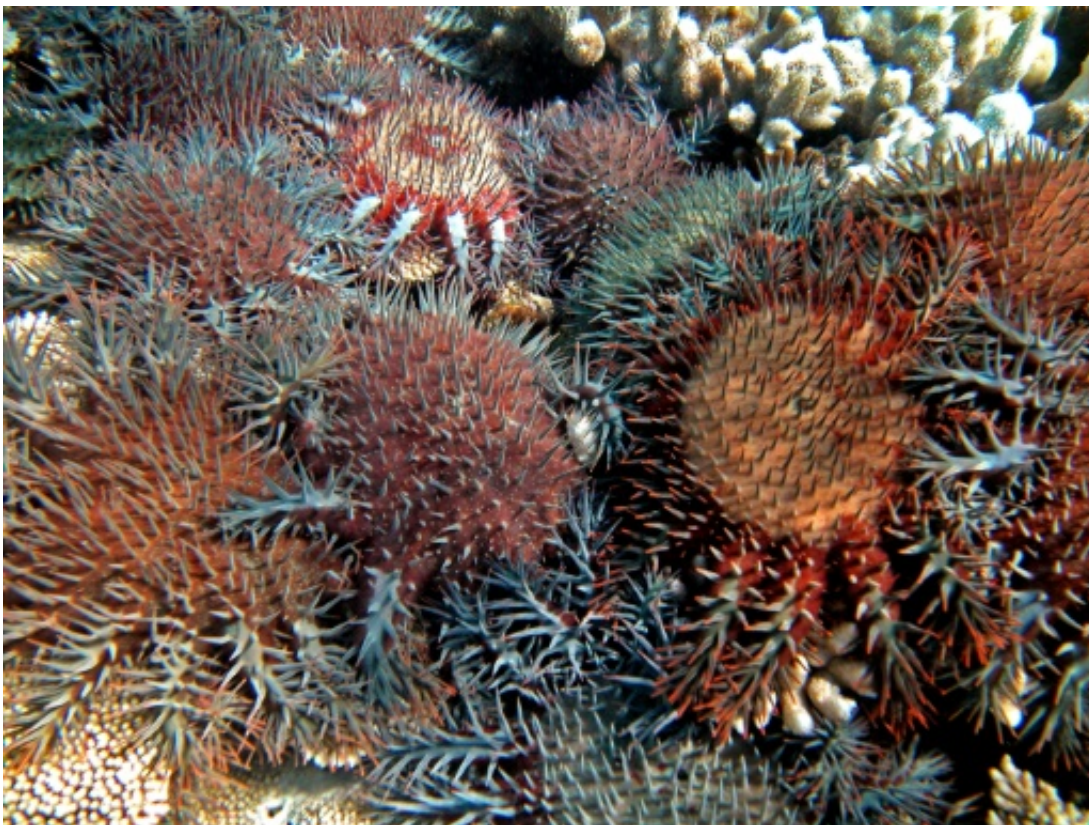
'Massive effort'

GBRMPA director of tourism and stewardship Fred Nucifora said the new method would be used to target reefs identified as having high conservation and tourism values.

"Culling crown-of-thorns starfish is a critical management activity to

protect coral cover and boost reef resilience, particularly in the wake of coral bleaching," he said.

Earlier this month, scientists revealed the 2,300-kilometre (1,400-mile) long Barrier Reef was suffering its second consecutive mass bleaching event due to warming sea temperatures, and said some coral had "zero prospect" of recovery.



The crown-of-thorns starfish is capable of chewing through kilometres of reefs when large numbers of it gather and spawn

The reef contributes more than Aus\$7.0 billion (US\$5.2 billion) a year to Australia's economy, supporting the livelihoods of some 70,000 people, and there have been warnings that dying coral could cost the

region more than a million tourists a year.

Bostrom-Einarsson said while the innovative new method was good news, it would be tough to wipe out starfish altogether.

"There are millions of starfish on the Great Barrier Reef and each female produces around 65 million eggs in a single breeding season," she said.

"It would take a massive effort to try and cull them all individually, but we know that sustained efforts can save individual reefs."

Vinegar has now been added to the GBRMPA's list of approved control chemicals, meaning operators can apply for permits to start controlling the [starfish](#).

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