Utilizing coconut fiber for the recovery of tropical sea cucumber resources

Production | Demonstration | Item: Tropical sea cucumber | Resource management

Outline

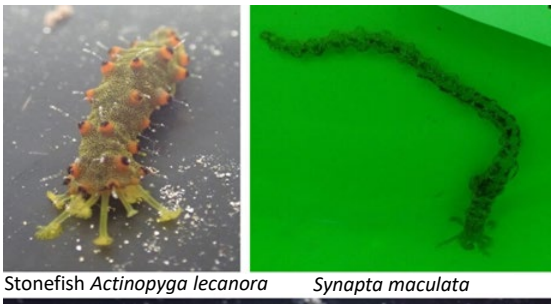
In tropical waters, sea cucumber resources are overexploited, and the release of seedlings (juveniles) has not been extended enough to recover the resources. We conducted experiments in Solomon Islands and demonstrated the technical feasibility of collecting wild seedlings of tropical sea cucumbers. Moreover, we found that coconut fiber is an efficient material for collecting the seedlings.

Background/effect/note

Wild seedling collection is a method of naturally attaching juveniles of invertebrates to materials moored in the sea. Examples of wild seedling collection have been reported for two *Apostichopus* species of temperate sea cucumbers, but not for tropical sea cucumbers. A tank experiment using hatchery-produced juveniles of the tropical sea cucumber, *Stichopus horrens*, showed that seedling collection efficiency of coconut fiber and mesh fabric was higher than that of oyster shells. Subsequently, simple seedling collectors filled with coconut fiber (Fig. 1) were moored in the sea for three months (Fig. 2), and multiple species of juvenile sea cucumbers were collected (Fig. 3). The collectors can be made cheaply using husks of commonly consumed coconuts and can be easily installed. Thus, we anticipate widespread adoption among the local fishing community to replenish the sea cucumber resources.

Fig. 1 Removing coconut fiber from the husk

Fig. 2 Deploying wild seedling collectors by snorkeling



Stonefish *Actinopyga lecanora* *Synapta maculata*

Dragonfish *Stichopus* cf. *horrens*

Unidentified species

Fig. 3 Juvenile sea cucumbers attached onto the wild seedling collectors

Technical details:
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