

Aquaculture training: Cooperation between Australia and New Caledonia

New Caledonia is attempting to diversify its aquaculture, which up until now, has mainly involved shrimp farming. Marine fish farming has become a reality in the Territory and now there is a need for training in specific hatchery techniques.

As part of his Aquaculture Business Management studies within the Conservatoire National des Arts et Métiers at the Institut National des Sciences et Techniques de la Mer — and through an agreement between Antoine Teitelbaum (SPC Aquaculture Officer) and Richard Knuckey (Principle Scientist at NFC) — Thibaud Moléana from New Caledonia spent two weeks at NFC, an Australian government-run hatchery in Cairns. During the training, Thibaud dove straight into hatchery operations and worked with the team, particularly with Daryl Harper, Angela Anderson and Matthew Reason.

NFC is working on culturing the larvae of tropical groupers such as *Epinephelus lanceolatus* and *Plectropomus leopardus*, which requires new techniques, especially the use of copepods.

The primary goal of copepod production is to produce an adult population and maintain it so that once specimens have been transferred to larval culture tanks, they can reproduce, and small-sized nauplii (about 60 µm) can then be absorbed by fish larvae in the first few days after hatching

NFC has facilities ranging from an isolation room with 60 L and 200 L tanks (Fig. 1) to 500 L outdoor ponds that are 2 m³ in size for *Parvocalanus crassirostris* farming.

Complex management

The complex task of managing the rearing tanks is done by controlling farming parameters, monitoring the copepods' physiological status, and providing microalgae such as *Isochrysis* sp. and *Tetraselmis* sp. Farming density is low (on average, from 2–4 adult specimens



Figure 1. Tanks used for copepod culture at NFC.

per mL) but the nutritional benefit that the copepods provide to fish larvae offsets this low production level. In terms of management, this type of innovative farming should play a role in conventional protocols for larval culture operations that require special attention. Over the long run, successful copepod production should allow improved biosecurity, optimal use of space for larval culture, better planning in terms of algal production, and decreased work time needed for all of these operations.

For more information:

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What are copepods?

Copepods are a group of small crustaceans found in the sea and nearly every freshwater habitat. Some of the marine species are planktonic (drifting in sea waters), some are benthic (living on the ocean floor). They play a vital role in feed for marine fish larvae. Recent progress in understanding and mastering the reproductive cycle of certain copepods has led to significant advances in marine fish production.

Picture: Uwe Kils,
source: Wikimedia commons.

