

Freshwater prawn hatchery master class for Fiji Ministry of Fisheries hatchery staff

*For six weeks in May and June of this year, one of the routine *Macrobrachium* prawn hatchery campaigns – which is operated four or five times each year by Fiji Ministry of Fisheries (MoF) aquaculture staff members – was transformed into a prawn larval rearing ‘master class’. This was both a refresher and technological update, in which MoF staff members were mentored in new and emerging international hatchery techniques by staff members of the Aquaculture Section of the Pacific Community (SPC). Due to recent retirements and staff changes within the MoF, it was timely to bring a new group of young and emerging local aquaculturists fully up to speed on the latest in best aquaculture practices.*



From left to right: Fiji Fisheries freshwater prawn hatchery staff members Aminio Gaunavou, Mererai Vualeba, Teresia Verekota, Miriama Delai, Velema Vunivisilevu and Isikeli Odro pose beside a prawn larval rearing tank at Galoa Brackish-Water Hatchery with Avinash Singh of SPC Aquaculture Section (image: T. Pickering, SPC).

The end result of the hatchery campaign was that all farmers in Fiji who had requested prawn post-larvae for pond stocking in 2017 were able to obtain them. The first farmer to benefit in this way was Mr Rajesh Lal of Navua who hosted a ceremonial pond stocking event at his farm, which was officiated by chief guest and Deputy CEO of MoF, Mr Sanaila Naqali. ‘Seed production is critical to support industry growth in Fiji aquaculture’ said Mr Naqali in his congratulatory remarks to the master class participants at the ceremony. ‘Adoption of new innovations and hatchery efficiencies are very necessary because government targets for prawn seed production for the next financial year are going to be increased. Thank you participants for your cooperation, patience and sacrifice of long hours to produce post-larval prawns for commercial farmers.’

The goal of the master class collaboration between Fiji MoF and SPC was to (i) enhance the capacity of hatchery staff members in Fiji in the understanding of the principles behind giant freshwater prawn hatchery seed production, (ii) empower staff members with tools to produce high quality seed, and (iii) increase production efficiencies and learn steps for overcoming constraints. Internationally emerging

hatchery innovations that were trialled during the master class included the use of tilapia tank water to stabilise water quality, new recipes for prawn larval food, and a range of improved water hygiene and filtration practices to increase the survival of larval prawns during the hatchery cycle.

Mr Shalendra Singh (Principal Fisheries Officer Aquaculture) explained that the MoF’s hatchery team conducts several freshwater prawn breeding cycles each year, in order to supply baby prawns to farmers. ‘A lot of money is spent each year on importation of prawns from overseas for Fiji’s tourism and hospitality industries’ said Mr Singh. ‘This is money that needs to be kept here inside our own economy. Providing this kind of support to Fiji prawn farmers is an important part of government policy to boost local production and address import substitution.’

To turn this latest prawn breeding cycle into a ‘master class’ the MoF aquaculture staff members were joined by SPC prawn hatchery experts. ‘New and updated techniques of prawn breeding are emerging in hatcheries overseas, in places like SE Asia and in USA’, said SPC’s Inland Aquaculture Advisor Tim Pickering during the first classroom session.

'It is SPC's role to network and monitor these emerging trends for technical transfer to our member countries. For example, there is new information available that increases our understanding about the use of natural algae-water in hatchery systems. If adopted through some modifications in hatchery technique, this can lead to healthier prawns and improved results.'

With support from the Government of New Zealand, under a new Sustainable Pacific Aquaculture Project implemented by SPC Fisheries Aquaculture and Marine Ecosystems Division, project staff members Avinash Singh and Jone Varawa worked alongside MoF hatchery operators throughout the major steps of the hatchery cycle in order to provide on-the-job mentoring and guidance in the latest techniques. The new techniques were compared alongside the existing ones.

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A: Aquaculture trainee Mererai Vualeba of Fiji National University (FNU) feeds out live Artemia brine shrimp to hungry prawn larvae.
B: The end result of the hatchery campaign: Prawn post-larvae ready for pond stocking.
C: Aminio Gaunavou at the microscope, checking various indicators of prawn larval health for entry into the hatchery daily record sheet.
D: The prawn post-larvae packed in plastic bags are being slowly acclimated to pond water temperature by Fiji Fisheries aquaculture staff members prior to release at the prawn farm of Mr Ravin Lal at Navua.

All images by T. Pickering, SPC