

11. VICTORIAN HATCHERY FEED PRODUCTION AND DEVELOPMENT

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The Victorian aquaculture industry is relatively small by Australian standards, with the majority of production occurring in the well established freshwater salmonid sector. Almost 800 tonnes of salmonid fingerlings worth an estimated \$5.8M were produced in Victoria in 1998 (Fisheries Victoria Aquaculture Information Bulletin, 2000). A small ornamental (predominantly *Carassius auratus*) aquaculture industry and small scale yabby (*Cherax destructor*) farming have also been in operation for many years. More recent developments in industry and at the research level, have been occurring in the hatchery production and growout of native fish, such as Murray cod (*Maccullochella peelii chpeelii*) and silver perch (*Bidyanus bidyanus*). Two tonnes of native fish fingerlings worth \$0.6M were produced in hatcheries in 1998 (Fisheries Victoria Aquaculture Information Bulletin, 2000). The intensive culture of shortfinned eel (*Anguilla australis*) is also beginning to develop in Victoria, but relies on the supply of wild caught glass eels as seedstock.

More recently, marine finfish such as black bream (*Acanthopagrus butcheri*), snapper (*Pagrus auratus*) and greenback flounder (*Rhombosolea tapirina*) have been produced on a small commercial scale and at research level. In terms of shellfish, commercial abalone (*Haliotis rubra* and *H. laevigata*) production has been developing over the last 3-4 years, and some commercial interest and government R&D investment is currently being made into the aquaculture of scallops (*Pecten fumatus*). The aquaculture of blue mussels (*Mytilus edulis planulatus*) is well established in Victoria. Algal requirements for both benthic and planktonic species is an area of interest, with some R&D currently underway, including FRDC funded research into the seeding of benthic diatoms onto settlement plates used in abalone aquaculture.

Until the recent entry into marine finfish culture in Victoria, hatchery feed

¹ Marine and Freshwater Resources Institute. (See details in appendix.)

requirements were limited largely to formulated diets for salmonids, and *Artemia* for native fish. Freshwater native fish too small to accept *Artemia* at first feed, and juvenile yabbies, have been catered for largely in fertilised plankton ponds, into which juveniles are stocked to graze on naturally produced live feed. These ponds, which have been specifically designed, are fertilised with organic and inorganic nutrients to encourage the development of phytoplankton blooms and, in turn, zooplankton blooms (rotifers, cladocerans, copepods) upon which the stocked fry feed. Management of these ponds is being developed and pond production is becoming more routine and reliable. Weaning diets for Murray cod and shortfinned eels are presently being developed and some commercial success has been seen with “crashing” Murray cod larvae and glass eels on to commercially available starter diets. Hatchery feeds for goldfish are generally limited to *Artemia* or larvae are placed directly into plankton ponds.

The development of microalgae and rotifer culture systems, and *Artemia* for marine production, at both private and government hatcheries has been more recent in Victoria. In some cases booster feeds and alternatives to microalgae for rotifer culture are being used. Limited application of commercial microdiets has also been undertaken in marine finfish hatchery production. The present level of hatchery production in Victoria is low however, but is expected to increase over the next few years with the anticipated development in marine finfish aquaculture.

The primary areas for R&D in hatchery feeds identified for Victorian aquaculture include the development of semi-continuous culture methods for freshwater rotifers (eg *Brachionus* spp., *Keratella* spp.), copepods (eg *Calamoecia*, *Boeckella*) and cladocerans (eg *Daphnia*, *Moina*), and the development of compounded starter diets for Murray cod, eels, and marine finfish.