

STANDARD OPERATION PROCEDURE

Lumpfish weaning





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NEED

Lumpfish larvae are offered live *Artemia* for the first 8 weeks post hatch.

However, the nutritional requirements of larvae cannot be feasibly sustained through live feeding alone. To maintain the provision of enough sustenance it is essential that larvae are weaned on to formulated feed.

NOVELTY

CSAR undertakes a prolonged period of weaning compared with examples from industry. Feeding live and formulated feeds in tandem for 6-7 weeks before reducing live feeding.

It is proposed that this decreases mortality over the weaning period.

EQUIPMENT USED

- Artemia culture equipment (see SOP 21)
- Record sheets
- Belt feeders
- Marine Larvae formulated diet:
 - 75um - 250um (Otohime 'A')
 - 250um – 360um (Otoheime 'B1')
 - 360um – 650um (Otoheime 'B2')
- 50ml beakers

Weaning

- Artemia are immediately offered after larval introduction to hatchery tanks (1-3 days post hatch (dph)) ([For artemia culture and feeding procedure refer to SOP 21](#)).
- Otohime grade A can also be offered at this time.
- From 7 dph a small amount of 'A/B1' should be offered to each tank, roughly **5-10%** of the estimated biomass per day.
- The feeding should be done by hand and ideally on an hourly basis over the working day.
- Alternatively dry feed can be offered between live feeds eg: 1st AM (before live feed prep), Lunch time (after live feed 1), Last PM (after live feed 2).
- Feed can be mixed with 'B2' after 14dph, phasing out B1 in the following weeks
- At around 56 dph feed can be dispensed using a belt feeder with the days feed evenly spread along the belt.
- Feed at **5%** 'B2'. This can be mixed with a larger grade (e.g Otoheime C1) if required.
- At the same time (56 dph) artemia should be withdrawn, this should be done by reducing the amount introduced to the tanks during each feed by 10-20% per day over the following week.
- It is highly likely that mortalities will significantly increase for a couple of weeks following this period but should soon settle.

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