Domestication and GnRHa-induced spawning of meagre (*Agyrosomus regius*).

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Good potential for aquaculture.
High growth rate = 1 kg body weight (BW) in one year.

Reports do not exist on captive spawning.
Wild specimens indicate puberty at >8 kg BW.

This study aimed to describe acclimation to captivity and spawning induction protocols.

All fish were infested with parasitic monogeneans, initial identification indicated two undescribed *Calceostoma* sp.

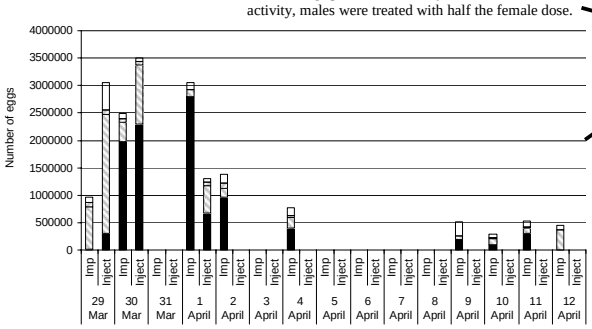
Three consecutive daily formalin baths (100ppm for 1 h) were given weekly for the first three weeks

Oral praziquantel treatment (5 mg Kg^{-1} BW).

Recirculation started, ammonia levels were stabilized at 0.1-0.3 $mg.L^{-1}$ after start-up peaks of 1.2 and 0.5 $mg.L^{-1}$.

A mature female with mean oocite size 566±9 µm jumped from the tank and died on the 26th February.

On the 26th March, four females had matured with oocytes greater than 560µm, females were treated with either a single GnRHa injection of 20 $µg.kg^{-1}$ or implant of 50 $µg.kg^{-1}$. Two of the males matured to give free flowing sperm with motility > 90% and > 5 minutes of sperm activity, males were treated with half the female dose.



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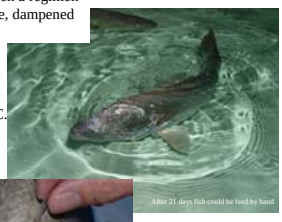
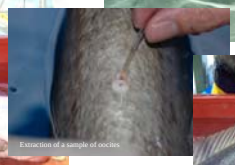
Twelve meagre (3 males and 9 females, mean weight 20 ± 7 kg) were caught off the Algarve coast, Portugal and transported to IRTA. On arrival (26th October) fish were weighed, PIT-tagged, examined for parasites and given an antibiotic injection (10 mg.Kg-1 Enrofloxacin).

Fish were acclimatised to two thermically-isolated 20-m^3 tanks in a recirculation system and given a regimen of natural light (≈50 Lux) and temperature, dampened to 14-25°C.

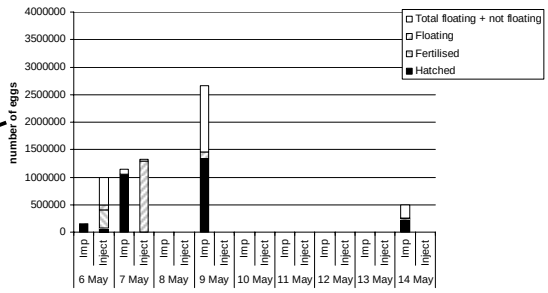
The first positive feeding response was observed 13 days after arrival (DAA) and from 21 DAA onwards the fish ate 0.8 - 2.5 % BW at 14 – 21ºC.





From the 21st February, 0.1% BW of a broodstock diet (Vitalis Repro, Skretting) was also fed.

On the 4th May the same four females again had oocytes greater than 560µm, but with the presence of large ovulated oocytes and atresia. Three of the males matured to give free flowing sperm but with lower quality, motility > 60% and > 3 minutes of sperm activity. GnRHa treatments were repeated.



After GnRHa treatment (26th March), two injected females spawned 7,221,000 floating eggs (3 spawns, relative fecundity 160,370 eggs.kg-1) and two GnRHa implanted females spawned 9,515,000 eggs (9 spawns, relative fecundity 216,250 eggs.kg-1). Fertilisation rates in all batches were 82-100% (min-max), but hatch rate was variable (2.4 - 95.4 %), means were 44.5±28.9 and 63.5±27.5 respectively for eggs from injected and implanted fish

Wild meagre appear to be tolerant of captivity. The protocols applied in this study, enabled large adult meagre to be acclimated to captivity in a closed recirculation system. The meagre completed maturation to an advanced stage and induced spawning protocols were applied successfully.

The number of eggs spawned in the second induction (4th May) was lower than in the first induction (26th March), the two injected females spawned 1,798,300 floating eggs (2 spawns) and two GnRHa implanted females spawned 2,915,000 eggs (4 spawns). Egg quality was reduced in the injection group, but increased in the implant group, fertilisation rates were 0-100% (min-max) and percentage mean hatch was 7.4 and 92.3 respectively for eggs from injected and implanted fish.

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