Growth and survival of adult long snout seahorse (*Hippocampus guttulatus*) using frozen diets

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Introduction:

Scientific data concerning the culture of *Syngnathidae* species is scarce and mainly concerning Indo-Pacific species. The long snout seahorse, *Hippocampus guttulatus* is a European species and as other *Hippocampus* species is protected under the CITES policy. There has been great focus in commercial seahorse aquaculture to minimize the use of live food, therefore, any frozen or artificial food that could sustain the high growth and survival rates of seahorses would be attractive to the industry.

Aim:

To investigate the effect of offering different frozen diets, mysids, shrimp and adult *Artemia* to adult *H. guttulatus* in order to evaluate the improvement in their fitness condition.

Conclusions:

Significant growth differences between animals fed adult *Artemia* and the ones fed with either mysids or shrimp, no differences between the shrimp and mysid treatments.
The possibility to wean seahorses onto non-live foods maintaining good growth rates and high survival.
Usefulness of *P. varians* (rearing species) as a natural diet.

Material and Methods

54 fish
6 per tank, 3♀+3♂

Flow through system
3 x 3, 90 litre tanks
19.7±0.1˚C
37.6±0.1‰
12L:12D
12 weeks experiment

fed
10% bw d^{-1}

Adult
Artemia

Mysids
Mesopodopsis slabberi

Atlantic ditch shrimp
Palaemonetes varians

Results

	Shrimp	*Artemia*	Mysids
Initial height (mm)	128 ± 10.9	134.2 ± 4.6	134.1 ± 8.1
Final height (mm)	144 ± 12.4[b]	141.3 ± 6.4[b]	151.7 ± 5.8[a]
Initial weight (g)	6.8 ± 1.6	7.4 ± 1.4	7.9 ± 1.5
Final weight (g)	10.6 ± 2[a]	7.3 ± 1.4[b]	12 ± 1.5[a]
WG (%)	58.9	-0.6	52.2
Initial CF	0.32 ± 0.06	0.31 ± 0.06	0.33 ± 0.05
Final CF	0.36 ± 0.07[a]	0.26 ± 0.04[b]	0.35 ± 0.04[a]
SGR	0.53 ± 0.1[a]	-0.01 ± 0.1[b]	0.48 ± 0.2[a]
FCR	5.6 ± 1.3[a]	21.4 ± 4.1[b]	6.8 ± 2.4[a]
% Survival	100	88.9	100

Rows with different superscripts are significantly different ($p<0.05$)