

# Larvi 2024

8th Fish & Shellfish Larviculture Symposium  
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## Reduction in *Artemia* nauplii levels fed to shrimp Larvae

*Does this result in  
a Reduction of Larvae Cost  
at the expense of an increase in farm cost*

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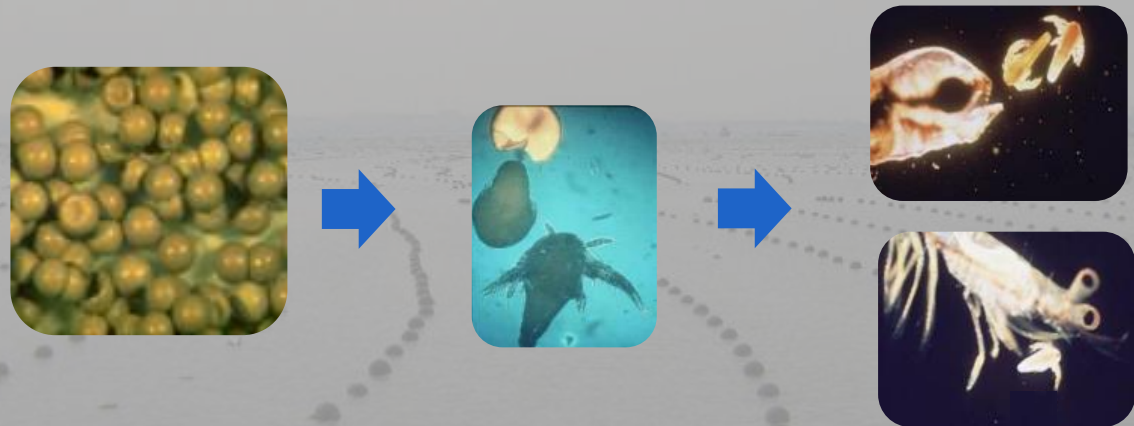


**Predictable** availability of **high quality**  
fry, fingerlings, postlarvae, seed ...



**THE key to successfull aquaculture !**

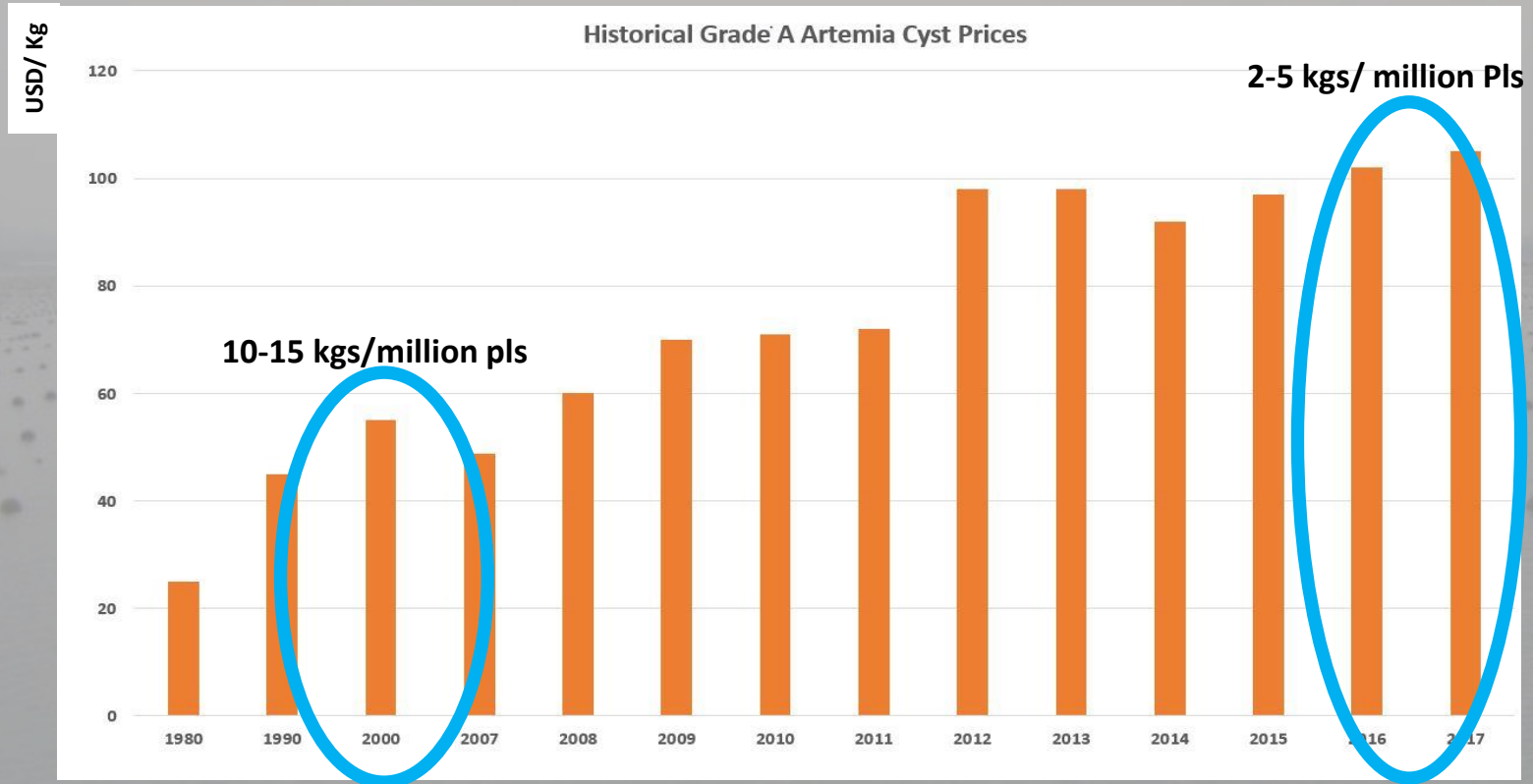
**Artemia** = crucial live food in the commercial production of fish and crustacean species



**Important new finding about minimum quantities of live food**

*Courtesy McIntosh et al., 8<sup>th</sup> larvi conference, Ostend-Belgium Sept 2024*

Over the years, Artemia usage has been reduced to save costs



Courtesy McIntosh et al., 8<sup>th</sup> larvi conference, Ostend-Belgium Sept 2024

## Economics of *Artemia nauplii* use in hatchery

Hatchery Artemia Use	Cost of Artemia Cyst	Cost of pls (USD/1000)	Cost of farm (2% Failure)	Cost of farm (10 % failure)
2kg	60	1.68	3.00	3.26
5 kg	60	1.85	3.01	3.28
10 kg	60	2.15	3.03	3.30

**Reducing use of high-priced *Artemia* cysts does decrease cost of postlarvae but has little impact on the cost of shrimp yield at harvest**

*Courtesy McIntosh et al., 8<sup>th</sup> larvi conference, Ostend-Belgium Sept 2024*



# Effect of feeding double amount of Artemia nauplii on shrimp PL 17 growth (size), survival and stress test

	Size (mm)	CV %	SR% pl7-17	Stress test
Artemia	31.5	7.0	97.5	98
Larval feed	29.3	8.7	99	97
Grow out	28.1	8.8	98	99

## Treatments:

- Artemia: 8 kg per million PL17
- Larval feed: 4 kg Artemia up to PL7 followed by larval diet
- Grow out feed: 4kg Artemia up to PL7 followed by grinded growout feed

**CONCLUSION: NO SIGNIFICANT DIFFERENCES**

## BUT: Artemia influences the Immune Competence of the postlarvae

immune peptide levels: - Heat Shock Protein 70 (HSP 70)  
- Prophenoloxidase (ProPO)

	Size (mm)	CV %	SR% pl7-17	Stress test	HSP 70 Relative %	Pro PO Relative %
Artemia	31.5	7.0	97.5	98		
Larval feed	29.3	8.7	99	97		
Grow out	28.1	8.8	98	99		
Artemia					100	100
Larval Feed					50	34
Grow out					32	0

**CONCLUSION: OTHER FACTOR IN ARTEMIA HAS IMMUNE STIMULATING EFFECT - PLs CAN BETTER RESIST STRESS OR PATHOGEN EXPOSURE**