Artemia harvest made easy

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To guarantee a consistently high-quality, hatcheries need to respect procedures and provide tools to harvest the Artemia in the most optimal way.

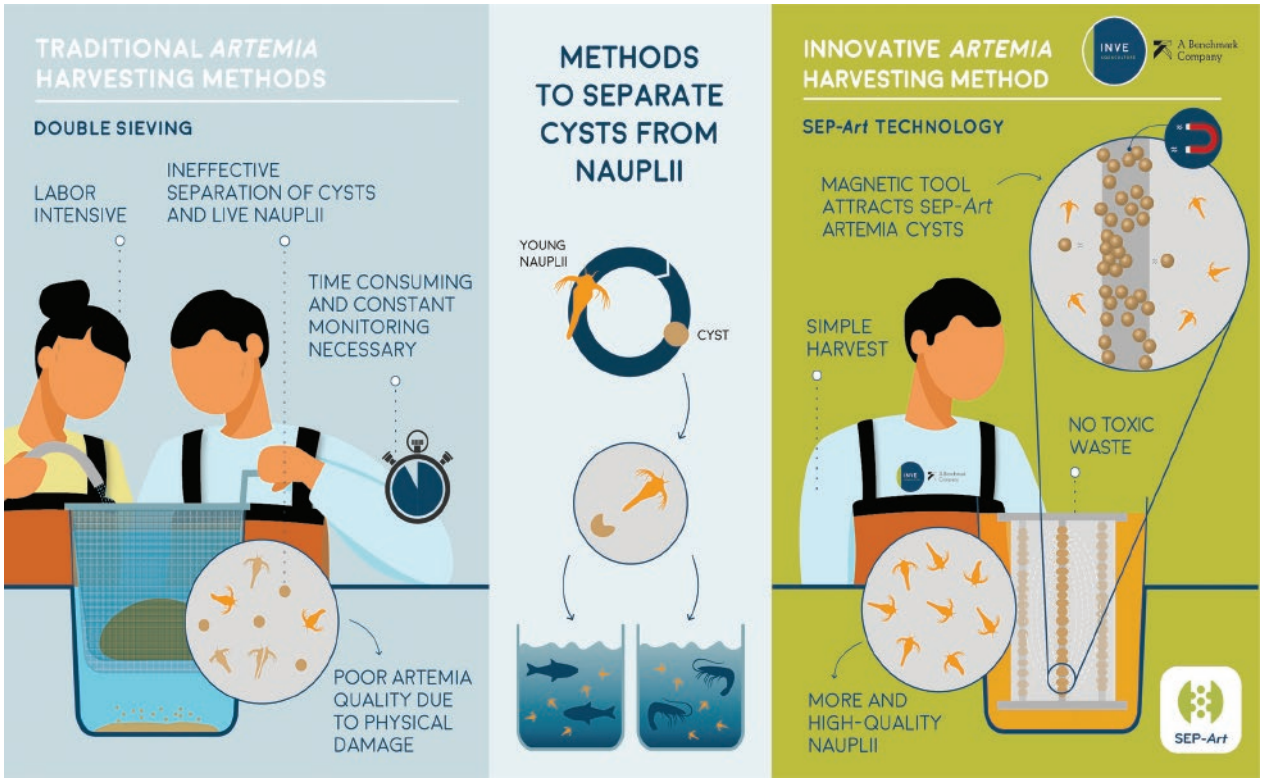


Figure 1. Methods to separate cysts from Nauplii.

Fish and shrimp hatcheries around the globe rely on Artemia nauplii as the preferred live larval feed to obtain a consistent and predictable production. Artemia triggers the feeding behavior of fish and shrimp larvae, has the appropriate size and is highly nutritious.

Convention but not convenient

During the hatching process, Artemia embryos inside the cysts develop into free-swimming live nauplii that can be found in the hatching tank together with the rigid shells and unhatched cysts. These unhatched cysts and remaining shells are inedible and must be separated from the nauplii before they can be used as feed. The cyst removal is a challenge even to modern aquaculture since the current methods are not always efficient and sustainable.

Artemia nauplii are separated from the cysts and shells by using the double-sieving method (Fig. 1). Double sieving is conceptually easy requiring only two superimposed, fine-meshed nets that function as a two-layered filter to separate the cysts from the Artemia nauplii, forcing the nauplii to pass through the mesh. This filtration process is time-consuming and laborious, and it determines the final quality of the live feed.

Additionally, the efficiency of the double-sieving method is influenced by several factors.

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT ARTEMIA



The new Artemia knowledge hub
comprehensively covers all the fundamental information and advanced data on this tiny little hero called Artemia.

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Cysts with a smaller size than the mesh will pass through the sieve, polluting the live nauplii suspension with indigestible material.

Double sieving can only be done when the live nauplii are still small (first larval stage, instar I), which restricts the method to an optimal harvesting time and the nauplii to be at high risk of being damaged during the separation process. Damaged and dead nauplii are a less attractive feed and leak nutrients to the medium. Together with the presence of unhatched cysts and shells, these nutrients can induce suboptimal conditions in the larval tanks favoring unwanted bacterial development in the larval tanks, increasing biosecurity risks in the hatchery.

Because of the clogging of the sieve, double sieving is not able to recover all nauplii and only a fraction of the obtainable Artemia biomass can be recovered, resulting in direct economic losses in the hatchery and increased production costs.

All of these factors contribute to the fact that the double sieve is an inefficient and labor-intensive method, less suited for economic upscaling.

A more efficient method

SEP-*Art* addresses the shortcomings of double-sieving, particularly the suboptimal recovery of biomass and the quality loss of the live feed. SEP-*Art* uses magnetism to separate Artemia nauplii from their cysts (Fig. 1).

Opposed to double sieving, SEP-*Art* does not employ meshed nets, entirely removing the chance of physical damage to the nauplii. All the nauplii present in the hatching tank can be efficiently recovered. The result is a suspension of very attractive, undamaged and highly active nauplii ready to be fed to the larvae.

More and better quality Artemia nauplii are harvested in less time and with fewer efforts. It increases the efficiency of the process and the quality of Artemia, allowing the upscale of nauplii production to support the sustainable growth of the aquaculture sector.

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