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FIRST FEEDING OF LOBSTER LARVAE (*HOMARUS GAMMARUS*)

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European lobster (*Homarus gammarus*) is a new species in marine aquaculture. Today there are only a few hatcheries in whole Europe and the reason is probably that lobster is a complicated species to culture in closed land based systems. Lobsters, and even lobster larvae, are very aggressive and considered as cannibalistic. To eliminate this problem, the lobsters must be kept isolated in single units to prevent them from killing and eating each other. Lobster farming therefore requires technology and facilities that are designed for this type of production and completely different from those used for fish farming. This also complicates feeding, rinsing and it requires water systems with relatively high temperature (18°C). The first feeding concepts for lobster larvae tested is either based on an open system, where the larvae are grown for 20 days before they transferred to single units, or a closed system if the larvae are transferred to single units immediately after hatching.

During the first feeding period, lasting from hatching until day 16-20, larvae pass through five stages (I – V) and change from a pelagic to a benthic state. In the initial feeding experiments the larvae were either given *Artemia*, different commercial, or experimental diets. The results showed that *Artemia* was preferred compared to all formulated diets and the survival ranged from 91-94% compared to <31% in the groups fed formulated diets. The larvae fed formulated diets also showed very low growth and reached only stage II after 20 days.

Following the first feeding period the lobster juveniles were gradually fed an increasing share of formulated diets through weaning. This was often associated with high mortality (>50%), but resent findings, performed in commercial scale units, have shown that if the weaning period increase and the formulated diets are introduced in the middle, and not at the end of the live food period, both the survival and growth might increase. Experimental waning diets containing raw material from the copepod *Calanus finmarchicus* have led to reduced mortality related to moulting and improved pigmentation of the lobster.

Like marine fish larvae there seems to be a close relationship between the content of highly unsaturated fatty acids in the diet (DHA, EPA and ARA) and the survival of the lobster larvae. The use of n-3 HUFA enriched *Artemia* increased survival twice through the live food period (20 days) compared to that obtained with unenriched *Artemia*. Another important variable in a closed system is the larvae and prey density in the first feeding units where it is important to slightly overfeed in order to reduced cannibalism.