

Sustainable and safe black tiger shrimp seed will increase profit of farmers

MOANA (Asia) Ltd.

Farmers can expect to increase their profit substantially due to the recent launch of domesticated & SPF black tiger shrimp (*Penaeus monodon*) seed by MOANA, the leading aquaculture company in the development and supply of genetically improved and disease free seed of black tiger shrimp. The product will be launched first in Vietnam (February 2008) and immediately thereafter in India and Thailand (July 2008).

Stagnation in black tiger shrimp production

Over the last few years black tiger shrimp production has stagnated and has been gradually substituted with the non-indigenous white shrimp (*P. vannamei*, imported from the Americas) to meet increasing demand. The major factor compromising the production and sustainability of the black tiger shrimp industry has been the lack of a reliable supply of black tiger breeders and high quality seed.

Creating a sustainable solution

A key solution in the sustainable production of farmed black tiger shrimp is the consistent availability of 100% SPF seed. The present problems in the production are related to the fact that, contrary to white shrimp, the black tiger shrimp had not been domesticated yet. Hence the supply of breeders for seed

production was and is still obtained from wild fisheries. Consistency in availability and quality of wild-caught breeders has decreased significantly over the past years. The only solution to this problem was to start a breeding program that would result in a genetically improved black tiger shrimp. This has been done over the past six decades for chickens, pigs and horses and since the late 70's also for some fish species. MOANA has done the same now for the black tiger shrimp.

Domestication and Genetic Improvement Breeding Initiative of MOANA

In 1999, MOANA started a visionary and ambitious scientific project in support of the revitalization of the black tiger shrimp industry. With the highest financial investment ever made in shrimp breeding, MOANA successfully developed the largest and most diverse gene pool of specific pathogen free parent stock worldwide. Over a period of three years, technologies have been developed on an industrial scale for the domestication of the black tiger shrimp. A family based genetic improvement program was launched for developing ever better breeds. The successful results of these initiatives have enabled MOANA to become the leading aquaculture company in the development and supply of genetically improved and specific pathogen free seed of black

tiger shrimp. MOANA's innovative approach through pedigree-based selective breeding (non-GMO) will fill today's need for sustainable production and fully traceable supply of high quality seed throughout the value chain.

Solution for the black tiger shrimp industry is available now

MOANA's extensive research & development efforts are an important success factor in the company's achievements. MOANA's team of renowned experts, in collaboration with leading universities in Europe, USA and Asia, is continuously focusing on further improving the genetics and culture technologies of the black tiger shrimp. MOANA's specific pathogen free and traceable seed, guaranteed with a MOANA Certificate, will add value throughout the global supply chain, benefiting farmers, processors, exporters, retailers and consumers. Combined with MOANA's know-how, services and technology, farmers will have the opportunity to improve quality, quantity and consistency in their production. Resulting benefits such as increased survival and improved growth rates will lead to more stable income and higher profits.

At the moment MOANA operates in six countries on three continents. The company, founded in Belgium by Mr. Flor Indigne, has its headquarters in Hong Kong. MOANA's bio-secure facility on the Big Island of Hawaii, the Nucleus Breeding Center, supplies the parent seed to its overseas Multiplication Centers. Currently, MOANA operates Multiplication Centers in Vietnam, Thailand and India through which high quality SPF seed is made available to shrimp farmers. Vietnam, currently the largest black tiger shrimp producer in the world, followed by India and Thailand will be the first countries where farmers will benefit from the SPF seed. This will boost the local shrimp industry tremendously in the coming years. Further expansion is planned in other countries in Asia, Middle East, Africa and Latin America over the next years. More information can be found at www.moanatech.com. See the testimonials pages for supporting statements about the MOANA initiative.

MOANA yield: MOANA demo farm, Vinh Chau, Soc Trang, Vietnam 2007.

	Moana ¹	Industry average ^{2,3}
Stocking density PL/m ²	30	30
Culture period (days)	120	120
Survival (%)	76	66
Size (g)	32	25.3
Feed conversion ratio	1.40	1.47
Feed price (USD)	1.25	1.25
PL price (USD/1000)	15	3.75
Shrimp price / kg at harvest (USD/kg) ⁴	5.9	5.0
Yield (kg/ha)	7,296	5,009
Income (USD/ha)	43,046	25,045
Cost PL (USD/ha)	4,500	1,125
Cost Feed (USD/ha)	12,768	9,205
Gross result (USD/ha)	25,778	14,715
Other cost (USD/ha)	10,433	7,163
Net profit (USD/ha)	15,345	7,552

1: Vietnam 2007; 2: Vietnam 2006; 3: Source: Master thesis, Nguyen Thanh Phuoc, Cantho University 2006; 4: At 24 July 2007.