

Technology No. 2

TIGER SHRIMP FARMING IN SALINE AFFECTED AREAS

Inventors: Dr. A.K. Reddy and Mr. Chandra Prakash

Division: Aquaculture

Technical details:

Tiger shrimp (*Penaeus monodon*) grows in sea/brackish water is considered as the best marine shrimp in terms of growth, meat quality and market demand globally. Tiger shrimp farming is limited to coastal states in India as its culture is practiced only in brackish water. CIFE however has demonstrated that this shrimp can be commercially farmed in inland saline lands using underlying saline water. This has opened new avenues for utilization of waste saline lands and ground saline water for a profitable venture.

Description of technology:

Tiger shrimp do not survive in inland saline water due to difference in the chemistry with that of seawater. The cause of mortality was assessed through bioassay trials and it was found that poor concentration of potassium in saline water is mainly responsible for mortality. Based on indoor experiments, field trials were carried out at high saline Baniyani Farm (Rohtak Centre, CIFE) during 2008 in two non-drainable ponds of size 0.25 ha, each lined with polyethylene sheets to prevent seepage and placed with 0.30 m thick layer of soil. These ponds were fed ground saline water from a bore well of salinity 12 ppt. The level of potassium was enhanced in saline water by adding muriate of potash (fertilizer grade) around 50 percent equivalents to coastal seawater. The methods of husbandry remained the same as that of coastal farms. A production 1680 kg/ha in 110 days at a stocking density of 10 PLs/ m² could be obtained. During 2012, grow-out trials of tiger shrimp were carried out in low saline (2-4 ppt) area of Lahli Farm (Rohtak Centre, CIFE) at a stocking density of 10 PLs/ m² and achieved a production of 2.2 ton/ ha in 150 days.

Technology benefits:

Interception of ground saline water and utilization in aquaculture ponds will lower down the ground table and help in soil improvement and reduction in secondary salinization. Since inland saline water is drawn from deep bore wells, it is pathogen free and bio-secure. Like agriculture, a crop of tiger shrimp is of 4-months duration and hence farmers may harness returns in a short time and can take two crops in a year during 8-months warmer climate (March- November).

Target geographical area:

The technology is highly suitable for the farmers of north-western India whose lands have become saline and where agriculture productivity is poor or zero.

Financial aspects:

1. Capital cost	: Rs. 8,00,000
2. Fixed cost	
Instalment of loan	: Rs. 1,14,280
Interest of capital	: Rs. 96,000
Sub-total	: Rs. 2,10,280
3. Variable cost	
Seed (2 lakh numbers per two crops)	: Rs. 90,000
Feed (2 crops)	: Rs. 2,79,939
Other miscellaneous	: Rs. 2,00,000
Sub-total	: Rs. 5,69,939
4. Gross income (Sale of 4 tones/ 2 crops)	: Rs. 12,00,000
5. Total (2+3)	: Rs. 7,80,216
6. Net income (4-5)	: Rs. 4,19,784

**Contact details:**

HoD, Division of Aquaculture, ICAR-CIFE, Mumbai
