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Oplan balik sugpo: Environment-friendly strategies in shrimp culture

Aquaculture Department, Southeast Asian Fisheries Development Center

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Why sugpo?

- ✓ Large size
- ✓ High survival
- ✓ High price
- ✓ Successful captive breeding



 **Oplan Balik Sugpo** hopes to help revive the tiger shrimp industry in the Philippines through production of high quality PL from the hatchery and **implementation of environment-friendly strategies for grow-out culture in ponds.**



SEAFDEC Aquaculture Department (SEAFDEC/AQD) was established in 1973 to conduct research, develop technologies, disseminate information, and train people in the farming of fishes, crustaceans, mollusks, and seaweeds for food, livelihood, equity, and sustainable development.

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OPLAN BALIK SUGPO

**Environment-friendly
strategies in shrimp culture**

How?

1 Quarantine, acclimation, and examination of giant tiger shrimp broodstock from the wild



Examination of wild spawners



Sampling of the wild spawner

2 Production of high quality PLs reared in a biosecure facility



Dedicated disinfection/shower building



Improved filtration system with UV sterilizer



Strict compliance to biosecurity protocols and monitoring

3 Production of giant tiger shrimp in ponds using environment-friendly strategies



Strict implementation of biosecurity protocols



Stocking of high quality postlarvae



Continuous monitoring of water and animal samples until harvest

Environment-friendly strategies

Reduction of salinity

Lower salinity can potentially reduce the luminous bacterial load and promote faster shrimp growth



Greenwater Technology

Chlorella as the most dominant species allows for a more stable water quality and suppresses the growth of pathogenic *Vibrio*

Crop rotation

Gives time for the breakdown of organic waster and improves sediment bacterial profile



Sludge Collector

Collects excreta and other debris in the corners and center of the pond

Usage of probiotics

Use of beneficial bacteria against pathogenic microbes



Improved pond management

Strict implementation of proper hygiene and sanitation in the pond facility reduces the risk of introducing shrimp pathogens

Biomanipulators

Mucus secretions of tilapia and/or milkfish cultured in the corners and center of the pond creates greenwater that suppresses luminous bacteria count

Cost and returns of giant tiger shrimp culture in ponds using an environment-friendly strategies

Area (m ²)	5,000
Feed conversion ratio (FCR)	1.25
Total stock	100,000
Date harvested	October 28, 2019
Stocking density (ind/m ²)	20
DOC at harvest	113
Average body weight (ABW)	30
Biomass (kg)	2,800
Survival rate (%)	93
Ave. price per kg (PhP)	500
Gross sales	1,400,000

Fry	12,000
Feeds	219,474
Salaries/Wages/OT	46,908
Pond Preparation	23,000
Lime	44,000
Biomanipulators	3,000
Probiotics	100,000
Power/lights/water	100,000
Fuel/Lubricants	10,000
Sludge collector/cages	30,000
Feeding bridge/tray	25,000
Laboratory analysis	80,000
Depreciation	57,340
R&M ponds/dikes/equip	50,000
Communications	10,000
Transport & travel	20,000
Total Expenses	779,112
Net Profit	620,888
Equipment	286,520
Investment Requirement	1,059,902
Return on Investment	59%
Payback Period	2 croppings (~1 year)

“Oplan Balik Sugpo - Reviving the tiger shrimp industry through science and technology”