White Crane®
AQUATECH

WCSS

NATURALLY PURIFIED WATER

White Crane
SMART SYSTEM

- No chemical used
- No water exchange system
- Good water quality and clean pond bottom
- Prevent from disease
- Healthy animals

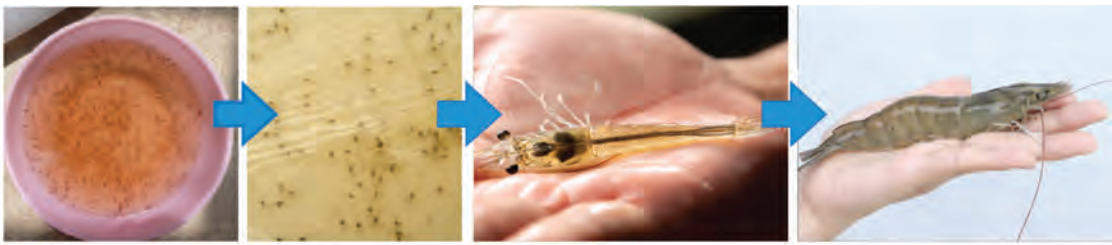
White Crane Smart System

- Clean water & pond bottom in long term.
- Prevent from disease and business loss.
- Cost saving for pond cleaning and shrimp investment.

Before going further one must understand, we are entering into a biological shrimp culture concept. Which means we are using beneficial bacteria to purify water instead of using chemical disinfectant or antibiotics. Most farmers do not understand the cause of problems, so they do not prevent.

In our No Water Change System, it is most important to keep cleanest environment in your pond. When we say clean environment, it means both clean water and clean pond bottom. It is important to understand that more shrimps create more waste, therefore the usage of biological product will have to match the amount of feed given to the pond. If more food given and not enough biological product used, it does not balance, so water will pollute more and problem will arise.

White Crane is the first company that came up with No Water Change shrimp culture since 1988. The No Water Change System was finally accepted in Thailand and abroad after more than 20 years of broadcasting, however more than 50% of the farmers do not adopt the correct way of pure NONE CHEMICAL culture and lead to many failure.



White Crane SMART SYSTEM

AIC

Advance
Intensive Culture

Pond size	4,000 m^2 pond x **1.50 m depth**
Stocking density	240,000 pcs
DOC	100 days
Harvest	5.1 ton
Size	40 pcs/kg
FCR	1.3

Step 1
Pond bottom preparation
Fill in water 30cm, apply BioChip 4 bags daily for 3 days, then wait for one week to see if any lab-lab come. If lab-lab still available, repeat Step 1. If no lab-lab occur, proceed to Step 2.

Step 2
Water culture
Top up water to 1.5m depth. Add 6kg FF(fermented food)* once every 2 days for 3 times. Adjust water parameter to standard level before stocking. Calcium 400 ppm, Magnesium 1,200 ppm, Alkaline 130+ ppm, pH 8.1-8.3. After 7 days, plankton should be present, brown water should be seen, stocking can be done. Proceed to step 3.

Step 3
Fry culture
Fry culture 14-16 days. Put in fry on Day 8-10 or whenever ready. Feed 1kg per 100,000 fry daily, and increase 10% feed daily until 1g body weight. Mix TonicFeed to food daily every meal, everyday all the way until harvest.

Step 4
Shrimp culture
Add TonicFeed to feed daily every meal all the way until harvest. Put 5 BioAqua Tablet into a 1.5 litre of drinking water bottle. Let it activate for 24 hours. Apply BioAqua Tablet liquid 1.5 litre to one acre pond daily. At DOC 30, start to apply BioChip 1kg once per week at pond center. At DOC 75, apply BioChip 1kg every 5 days at pond center. All the way until harvest.

DOC 1-30 apply TonicFeed 1 tablet into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
DOC 31-60 apply TonicFeed 2 tablets into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
DOC 61-120 apply TonicFeed 3 tablets into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.

White Crane SMART SYSTEM

White Crane AQUATECH

AEC Advance Extensive Culture

Pond size	4,000m² pond x **1.50 m depth**
Stocking density	30,000 pcs
DOC	120 days
Harvest	1 ton
Size	20-25 pcs/kg
FCR	1.3

Step 1
Pond bottom preparation

Fill in water 30cm, apply BioChip 4 bags daily for 3 days, then wait for one week to see if any lab lab come. If lab-lab still available, repeat Step 1. If no lab lab occur, proceed to Step 2.

Step 2
Water culture

Top up water to satisfactory level. Add 6kg FF (fermented food)* once every 3 days for 3 times. Adjust water parameter to standard level before stocking. Calcium 400 ppm, Magnesium 1,200 ppm, Alkaline 130+ ppm, pH 8.1-8.3. After 7 days, plankton should be present, brown water should be seen, stocking can be done. Proceed to step 3.

Step 3
Fry culture

Fry culture 14-16 days. Put in fry on Day 8-10 or whenever ready. Feed 400g feed daily, and increase 10% feed daily until 1g body weight. Mix TonicFeed to food daily every meal, everyday all the way until harvest.

- DOC 1-30 apply TonicFeed 1 tablet into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
- DOC 31-60 apply TonicFeed 2 tablets into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
- DOC 61-120 apply TonicFeed 3 tablets into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.

Step 4
Feed rate for 50,000 fry in kg

ABW : Shrimp Feed

1g to 5kg	13g to 21kg	25g to 30.5kg
2g to 7.5kg	14g to 22kg	26g to 31kg
3g to 9kg	15g to 23kg	27g to 31.5kg
4g to 10kg	16g to 24kg	28g to 32kg
5g to 12kg	17g to 25kg	29g to 32.5kg
6g to 13kg	18g to 26kg	30g to 33kg
7g to 14kg	19g to 27kg	31g to 33.5kg
8g to 15kg	20g to 28kg	32g to 34 kg
9g to 16.5kg	21g to 28.5kg	33g to 34.5kg
10g to 18kg	22g to 29kg	34g to 35kg
11g to 19kg	23g to 29.5kg	35g to 35.5kg
12g to 20kg	24g to 30kg	Add 0.5kg/g

***Fermented Food (FF)**

During water culture, to make plankton before stocking of shrimp fry.

Put 4 tablets of TonicFeed into 5 litre of drinking water in a gallon. Leave it to activate for 24 hours, then mix 5 litre activated TonicFeed liquid to 4kg shrimp feed in a Styrofoam box. Close the lid and store in a shaded place. Leave it for 2 nights. Liquidize fermented food*(FF) by blender machine or filter in by fine mesh net before applying into the pond water. Apply to 1 acre (4,000m^2) pond area with a water depth of 1.5 M. Repeat application daily for 3 days in a row. Apply between 7 to 9 o'clock in the morning.

White Crane AQUATECH

Benefits of applying

WCSS

White Crane SMART SYSTEM

1. Water quality will be stable and not green throughout whole cycle.
2. Pond bottom will never turn black and bad odor will not happen throughout the whole cycle.
3. No ammonia, nitrite, nitrate will ever happen.
4. No zoothamnium, no black gill, tail rot,or broken antenna throughout whole cycle.
5. Shrimps will grow fast and have good color.
6. During harvest, there will be no black mud go into shrimp gills.
7. After harvest, pond bottom will have no bad odor and soil will not become black.
8. Pond preparation for next cycle can begin after harvest without drying the pond. No time wasted for pond preparation.
9. Less BioChip will be used after WCSS cycle, as pond bottom is not dirty and no odor.
10. No disinfectant or chemical needed during pond preparation or during culture which can save cost.
11. No need to change water throughout the whole cycle.
12. WCSS product costs is **NOT EXPENSIVE** after all.

Not more than USD 0.20 per 1kg shrimp.

ไบโอชิป

BioChip®

content 1kg

A biological product to clean pond bottom.When pond bottom is clean, shrimps will eat more, molt regularly, and grow faster.

Usage:

• During culture - when pond water become too green, use BioChip 1 bag (1kg) per 1,000m² pond daily at 6.00 P.M. to reduce green water until satistactory level.

• When water pH in the afternoon is above 8.3, use BioChip 1 bag (1kg) per 1,000m² pond daily at 6.00 P.M, to reduce water pH in the afternoon until satisfactory level.

• During culture - if shrimps does not molt, has broken antenna, broken legs, and black gills, apply 1 bag (1kg) per 1,000m² pond. Shrimps will molt and problems will be cleared.

• To clean up pond bottom after every harvest before adding water for next culture, use BioChip 1 bag (1kg) per 1,000m² with 30cm water, daily for 3 days until pond bottom is clean, no lab-lab or algae growing in pond bottom before adding water.

ไบโอะควา ชนิดเม็ด

BioAqua Tablet

content 100g

is a biodisinfectant. Regular usage of BioAqua Tablet will prevent vibrio bacteria infection which is pathogenic bacteria and main cause for all diseases in cultured animals and in pond water.

Usage :

Put 5 BioAqua Tablet into a 1.5 litre of drinking water bottle.
Let it activate for 24 hours before using.

1. For eliminating green plankton or converting green plankton to zoo plankton, apply BioAqua Tablet liquid 1.5 litre to one acre pond daily for 3 days.
2. For preventing green plankton. Apply 1.5 litre to one acre pond area every other day.
3. To remove Microcystis, put one bag (40 tablets) BioAqua Tablet into 5 litre and let it activate for 24 hours. Add 2.5 litre activated liquid to 5 litre pond water to a sprayer tank, then spray all over Microcystis floating surface area. Mix the remaining activated liquid to one acre pond water. Apply daily to complete treatment.

โทนิคฟีด

TonicFeed

content 100g

A probiotic feed additive for preventing green water, enhancing feed intake, better growth, good FCR and prevent diseases.

Usage:

- DOC 1-30 apply 1 tablet into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
- DOC 31-60 apply 2 tablets into 1.5 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.
- DOC 61-120 apply 3 tablets into 2 litre of drinking water bottle. Let it activate for 24 hours, then mix to 20-25kg feed.

Mix well and feed directly to shrimp every meal, everyday, all the way until harvest.

ไบโอโปร

BioPRO

content 100g

A biological feed additive for eliminating white feces disease in fish and shrimp.

- Clear up white feces problem within 5 days.
- Help control pathogens in the digestive system.
- Strengthen the immune system.

Usage:

Dilute 1 bag (100g) into 2 litre of drinking water bottle and mix well until no clump, then mix to 20-25kg shrimp feed. Feed every meal, everyday for 5 days in a row.

In serious case:

Some farmers use 1 bag (100g) into 1 litre of drinking water bottle and mix well until no clump, then mix to 10kg shrimp feed. Feed every meal, everyday for 5 days in a row.

Recommendation:

Immediate action is taken place after white feces is observed not later than 1 day.

White Crane® AQUATECH

BioChip removes

- Black mud
- H_2S
- Bad odor
- Lab-lab

Before After

BioChip research

A Study on the Effectiveness of Two Microbial Products in Reducing Organic Substances from shrimp farming.

The effectiveness of two microbial products to reduce the amount of organic matter from shrimpculture.

(*Litopenaeus vannamei*), using microbial products for reduce ammonia is 0.373 ± 0.047 mg/l, which is different to the group. The addition of microbial products and Bio-chip© and Bio-time© was 0.260 ± 0.061 and 0.210 ± 0.010, respectively, and at 10,15, 20 day containing microbial had no different. However, different groups with no additional treatment. And the retention of 25 day did not differ statistically significantly ($P<0.05$). Retention nitrite during the trial all groups showed no significant difference was statistically significant ($P<0.05$) of the total bacterial degradation of organic matter on 5, 10, 15 and 20 were not significantly different in both microbial groupsBio-chip© and Bio-time© to reduce the amount of organic matter in the sediment reduce waste from waste of shrimp culture, Bio-chip© are likely to reduce the amount of organic matter over the past several days compared with Bio-time© in 0.05 milligrams per liter (ppm.) compared with unused products and requires more than 25 days to reduce the amount of organic ammonia and nitrite waste of white shrimp.

Keyword : Microorganisms; water treatment; waste disposal; white shrimp.

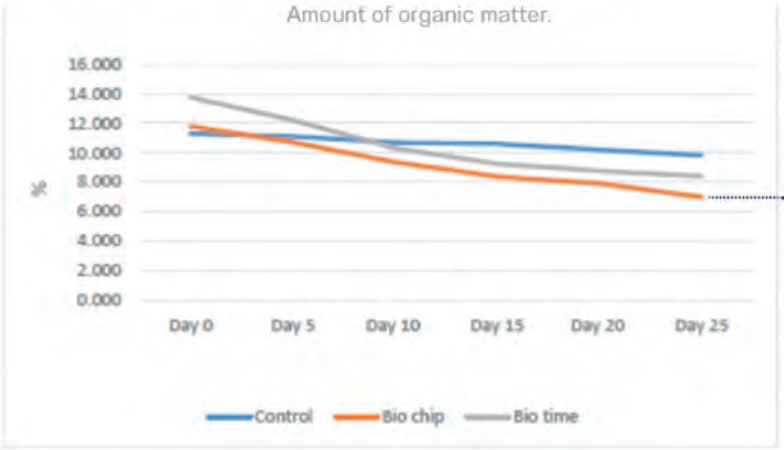


Figure 3 shows the amount of organic matter in each encapsulation set (%)

Table 3 : The amount of organic matter remaining in each day period

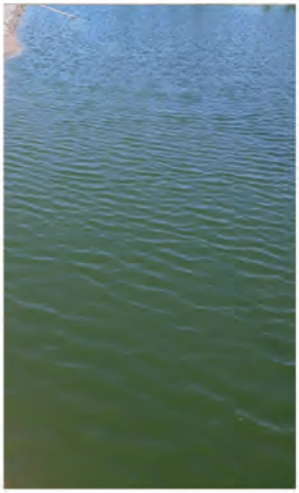
Treatment	Day 0	Day 5	Day 10	Day 15	Day 20	Day 25
T1	11.283±0.193^{w}	11.103±.0156^{w}	10.689±.0278^{w}	10.592±.352^{w}	10.190±0.80^{w}	9.799±0.028^{x}
T2	11.785±0.922^{w}	10.700±1.542^{w}	9.349±1.920^{w}	8.376±1.814^{w}	7.893±1.525^{w}	6.974±1.340^{y}
T3	13.740±2.967^{w}	12.205±2.101^{w}	10.300±0.572^{w}	9.248±0.240^{w}	8.749±0.239^{w}	8.393±0.397^{xy}

*Vertical English characters have statistically significant differences in meaning (P-0.05)

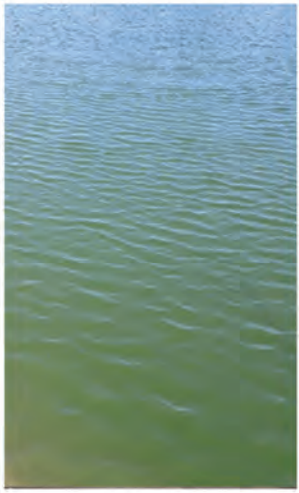
BioAqua Tablet

Excessive protein can cause many kinds of phytoplankton. When these excessive phytoplankton die off, they sink to bottom and turn to lab-lab. These phytoplankton or dead plankton or lab-lab will need oxygen to live or to digest themselves.

Before



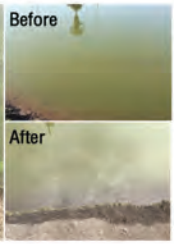
Day 2
(second treatment)



Day 4
(after 3 days of treatment)

Before ——— After

Green water has high amount of phytoplankton which will cause high pH fluctuation between morning and late afternoon. This will cause big stress to your shrimp. Moreover the green plankton will absorb high amount of oxygen making low DO in water during night time.



BioAqua research

The table summarizes the amount of organic matter included in each laboratory excreta waste.

Duration	Test group (unit : percent)			
	Group 1 (Control Panel)	Group 2 (Control Panel)	Group 3 (Control Panel)	Group 4 (Control Panel)
Get Started	80.4240 ± 0.12^{aA}	80.6903 ± 1.20^{aA}	80.3706 ± 0.71^{aA}	80.7962 ± 0.73^{aA}
First Time	80.3559 ± 0.01^{aA}	76.5401 ± 0.68^{bB}	73.6867 ± 0.36^{cB}	73.6374 ± 0.43^{cB}
Second Time	80.2280 ± 0.06^{aA}	74.0670 ± 0.79^{bC}	64.1228 ± 0.67^{cC}	63.9021 ± 2.39^{cC}
Third Time	80.1574 ± 0.32^{aA}	73.0639 ± 0.52^{bC}	55.8486 ± 0.46^{cD}	55.7021 ± 0.70^{cD}

Noted : lowercase horizontal English characters and vertical English characters

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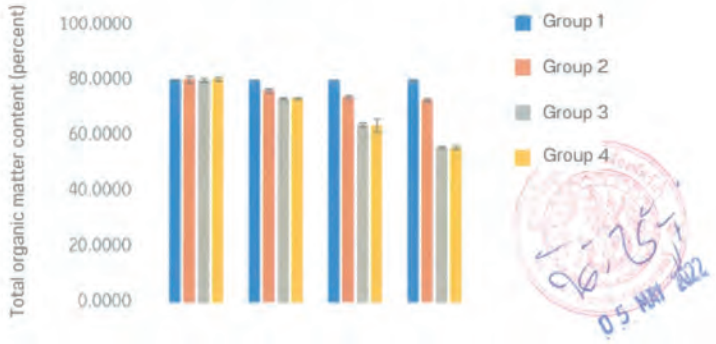

Figure 1 Total organic matter content (Total Organic Matter) in the sediment after inserting the product each time.

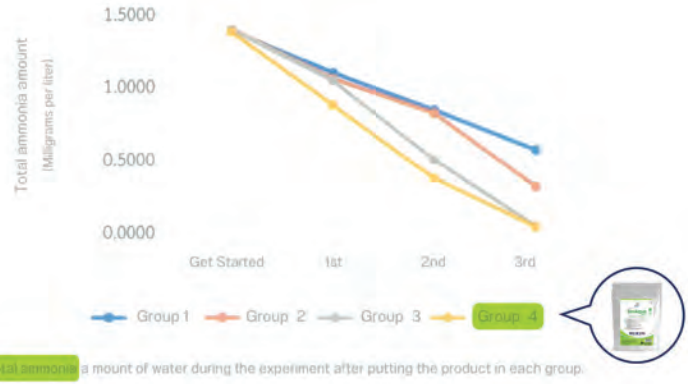

Figure 2 Total ammonia amount of water during the experiment after putting the product in each group.

Customer's Review

" I can say that my farm is THE ONLY shrimp farm, not attacked by EMS (Early Mortality Syndrome) disease in the whole Malaysia. In addition, we never fail even one crop with the usage of White Crane Smart System for the past 13 years."

Sarawak East Malaysia.
Mr. Andy, Senior Technician

Customer's Review

White Crane is the first company that came up with **"No Water Change"** shrimp culture since 1988.

We Care for health & environment

Manufactured by :

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