calix

AQUACULTURE
CUSTOMER STORY \ MAY-AUGUST 2016
BLUE ARCHIPELAGO

Yield Improvement in Shrimp & Prawn

Grow Out Using AQUA-Cal+

AQUA-Cal+™

The case study snapshots

CHALLENGES

- Presence of toxic sludge and the heavy metals causing water turbidity
- Constant fluctuation in pH and alkalinity leading to poor water quality
- Poor aquatic ecosystem affecting the health of the shrimp yield
- Low quality of shrimps having a small size and low survival rate

SOLUTION

Calix's AQUA-Cal+ is a special formulation of Magnesium Hydroxide enhanced with Calcium. It improves the quality of water and thereby promoting better and healthy aquatic life. AQUA-Cal+ is non-toxic, non-corrosive, safe to handle and environment-friendly.

A trial was taken at the shrimp pond, where a comparison was done between a Control Pond that followed standard practices as opposed to dosing of AQUA-Cal+ 1 and AQUA-Cal+ 2 in two other ponds. A comparison of the water quality and shrimp yield in all the three ponds was performed. The ponds treated with AQUA-Cal+ showed a significant improvement in water quality and generated a healthier shrimp yield.

BENEFITS

- Reduces the sedimentation time, thus reduces the need for desludging
- Reduces the presence of heavy metals and toxic chemicals
- Controls fluctuation in pH and alkalinity
- Increases water clarity
- Promotes algae growth
- Improves self- sustainability and maintains a healthy ecosystem
- Improves shrimp growth and quality of the yield
- Increases shrimp survival rate

Background

LOCATION

IKerpan Farm, Kerpan, Malaysia

OBJECTIVES

Primary:

- Achieving a PL survival rate of 80% or above.
- Reducing the toxic sludge build up at the bottom of the pond.
- Reducing water turbidity and the presence of any heavy metals.
- Reducing large fluctuation in pH.
- Maintaining and preventing large fluctuation in alkalinity (80 – 160ppm).

Secondary:

- Passing DOC 50 days.
- Passing DOC 80 days (near harvest).
- Achieving Higher Daily Growth (ADG) against Control.
- Achieving Higher Body Weight (ABW) at harvest against Control.
- Achieving lower FCR against Control.

TRIAL SETTINGS

Pond Details

Pond	Size	Pond Surface
Control	0.8ha x 1.3m	Full Lining
AQUA-Cal+ 1	0.8ha x 1.3m	
AQUA-Cal+ 2	0.8ha x 1.3m	

Control standard practice daily drainage after 21 days
AQUA-Cal+ 1 = weekly dosing of AQUA-Cal+. Drainage once per week
AQUA-Cal+ 2 = weekly dosing of AQUA-Cal+. Drainage once per month

Stocking Details & Culture Period

Pond	PL Age (days)	Density (per m^2)	Duration (days)
Control	13	110	90
AQUA-Cal+ 1	19	110	
AQUA-Cal+ 2	19	110	

**PL type = SPR (Pathogen Resistant)*

AQUA-Cal+ Dosing Details

Pond	Pre-treatment Rate (ppm)	Pre-treatment Rate (Kg)
Control	N/A	N/A
AQUA-Cal+ 1	20	208
AQUA-Cal+ 2	20	208

AQUA-Cal+ Dosing Details

Pond	Dosing Freq.	Dose Rate (ppm)	Total Dose per Week (Kg)	Duration (Weeks)
Control	N/A	N/A	N/A	13
AQUA-Cal+ 1	2 splits per week	5	52	13
AQUA-Cal+ 2	2 splits per week	5	52	13

Remarks: 2 splits per week; apply the remaining dosage 3 or 4 days after the 1st dose.

TRIAL WALKTHROUGH

The beginning of the trial in May 2016

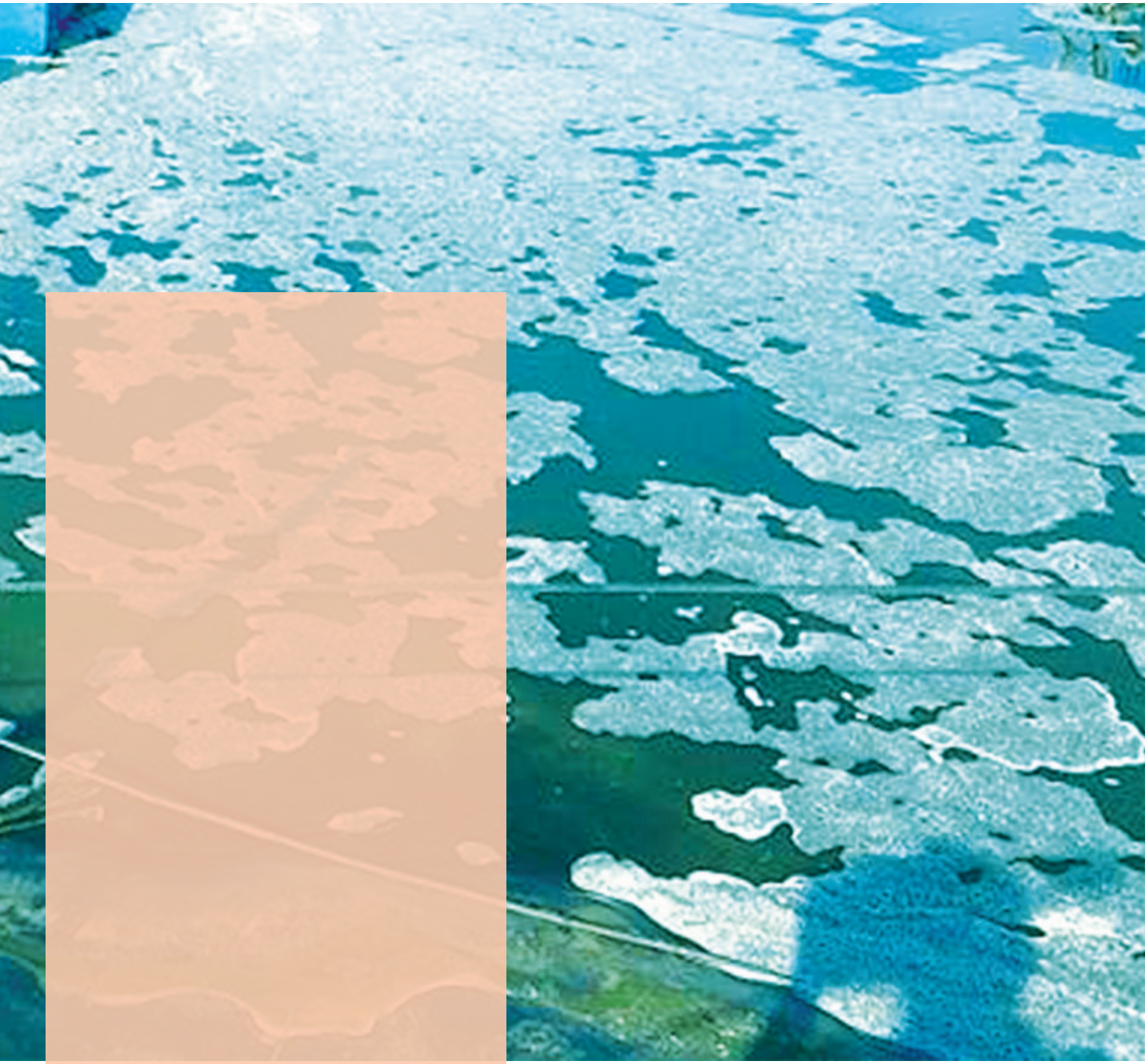
Stationed AQUA-Cal+ IBC Tank at one of the trial pond

Traces of AQUA-Cal+ and minimal sediment on waterbed observed

AQUA-Cal+ 1

AQUA-Cal+ 2

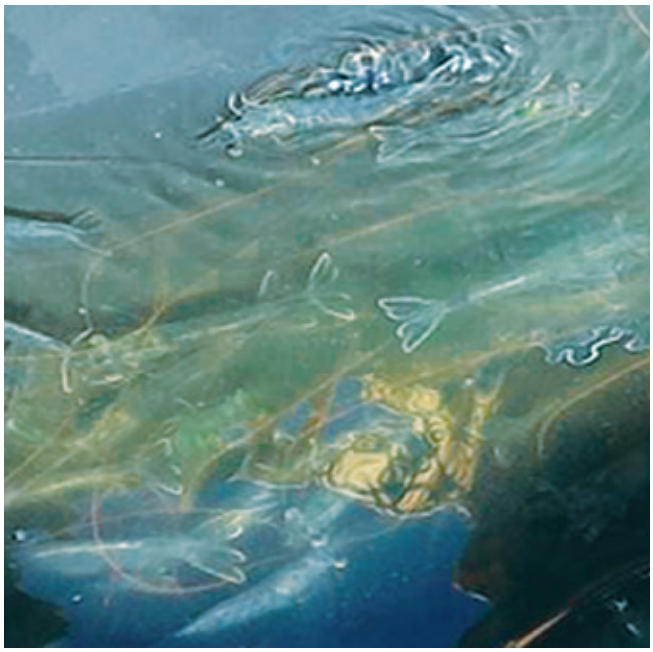
Comment: Water had good color, low turbidity, and good transparency level.



Water condition in June 2016

Control Pond

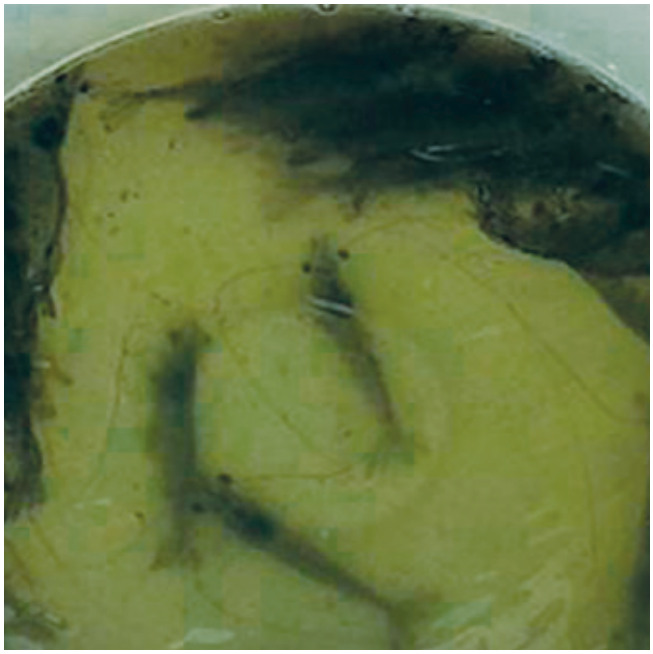
Shrimp Growth in June 2016



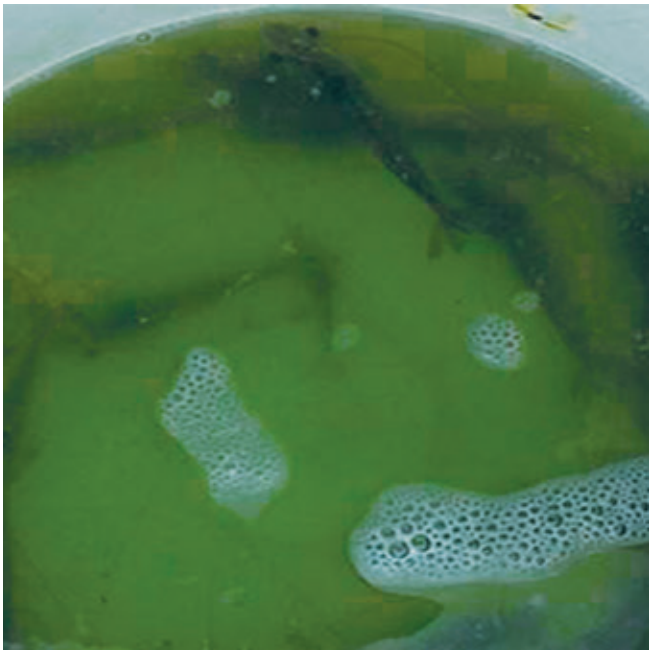
AQUA-Cal+ 1

AQUA-Cal+ 2

Comment: Shrimps were healthier, more active, and larger in size. Water clarity was very good.



With AQUA-Cal+
(DOC 42)

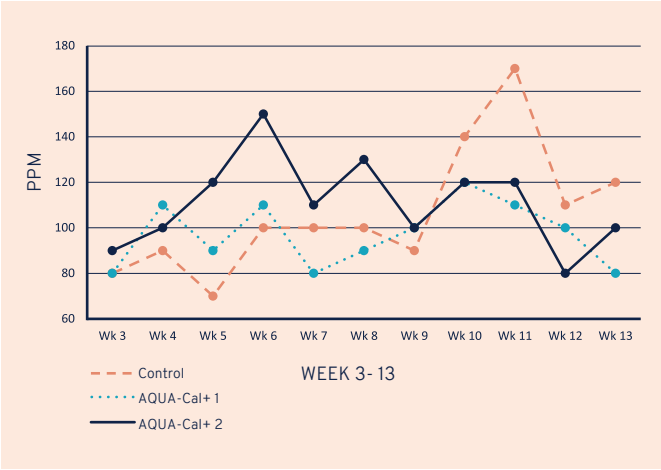


Without AQUA-Cal+
(DOC 52)

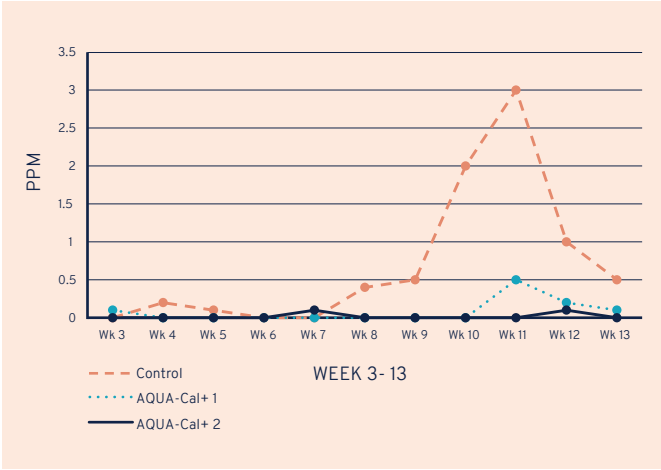
Comment: Shrimps were healthier, more active, and larger in size. Water clarity was very good.

PROGRESS GRAPH

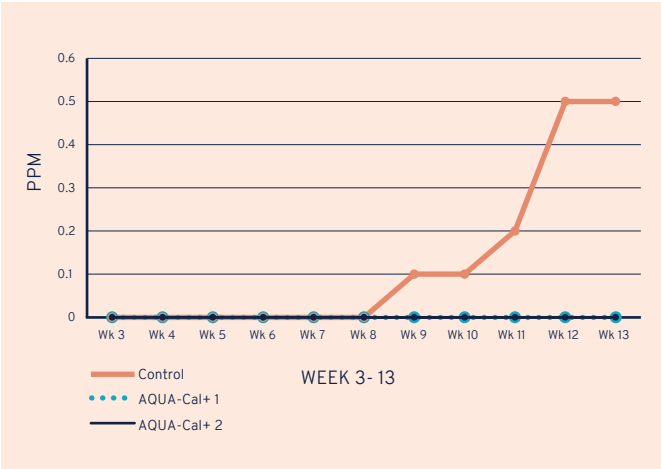
Alkalinity Control



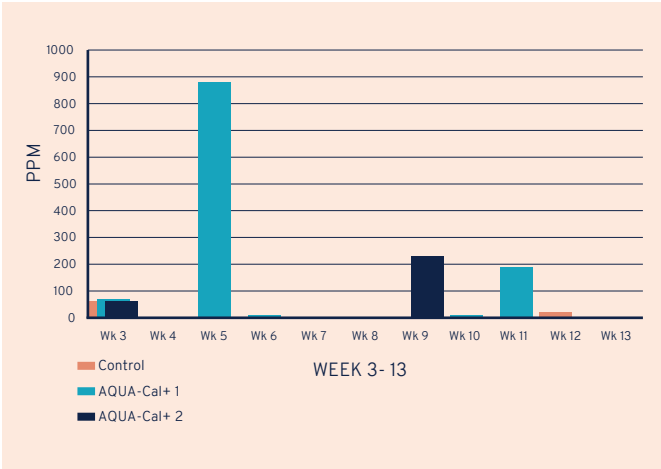
Ammonia Control



Alkalinity Control



Vibrosis Presence



PROGRESS GRAPH

Pond	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11
Control	2.71	3.48	4.48	5.97	6.22	7.88	8.48
AQUA-Cal+ 1	**3.02**	**4.27**	**5.64**	**6.22**	**6.45**	**7.50**	**8.28**
AQUA-Cal+ 2	**3.25**	**4.06**	**5.16**	**5.41**	**6.37**	**8.42**	**8.72**

HARVEST SUMMARY AND RENEVUE

Pond	ABW	SR (%)	FCR	Harvest Weigth (kg)	Total Revenue (RM'000)	Difference Against Control		
						(kg)	(%)	(RM'000)
Control	9.24	88.66	2.00	6,908	138	-	-	-
AQUA-Cal+ 1	**11.03**	**93.26**	**1.55**	**8,208**	**164**	**+1,300**	**+18.8**	**26**
AQUA-Cal+ 2	**9.66**	**97.53**	**1.59**	**7,944**	**158**	**+1,036**	**+15.0**	**21**

TRIAL CONCLUSION

	Objectives	Measurement
1.	Survival Rate	Achieved higher than 90%
2.	Alkalinity Stability	Maintained between 80 – 160ppm
3.	Nitrite Control	Maintained at 0ppm
4.	Water Turbidity	Achieved low turbidity and promote more plankton growth, better water clarity
5.	ADG	Around 15 – 30% higher against Control
6.	ABW	Around 4 – 19% higher against Control
7.	FCR	Around 20% lower against Control
8.	Vibriosis Control	Some good evidences of good control over vibriosis

OVERALL SUMMARY

7 reasons for adopting AQUA-Cal+:

1.
An effective, multi-functional, non-toxic product for the environment, humans, and aquatic life.

2.
Works great with minimal desludging/water exchange practices.

3.
Promotes stronger, faster shrimp growth and higher survival rate of above 90% by preventing toxic sludge build-up.

4.
Enables shorter sedimentation time and excellent heavy metal flocculation for cleaner and safer pond water.

5.
Helps to reduce FCR by promoting good algae growth.

6.
Helps to reduce or replace some synthetic chemicals.

7.
Helps to preserve the environment towards a sustainable and expandable business.

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Calix has established a network of local distributors and partners who can deliver our solutions across the globe, to ensure you receive excellent customer service and support, wherever you are located.

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