



Fighting and avoiding *Vibrio* in
Intensive Culture of
Litopenaeus vannamei:
Overview of Research done at
CreveTec Farm

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Who is CreveTec ?

Activities:

Consulting for shrimp feed formulation and production

Consulting for shrimp farming

Research for shrimp nutrition, additives and ingredients

Production of shrimp hatchery feeds

Production of specialized shrimp feed concentrates

Operate the only indoor shrimp farm in Belgium
+ feed research station



Maybe the only indoor shrimp farm in the world with 100 % recycling ? Same water since 2015



Why do shrimp die ?

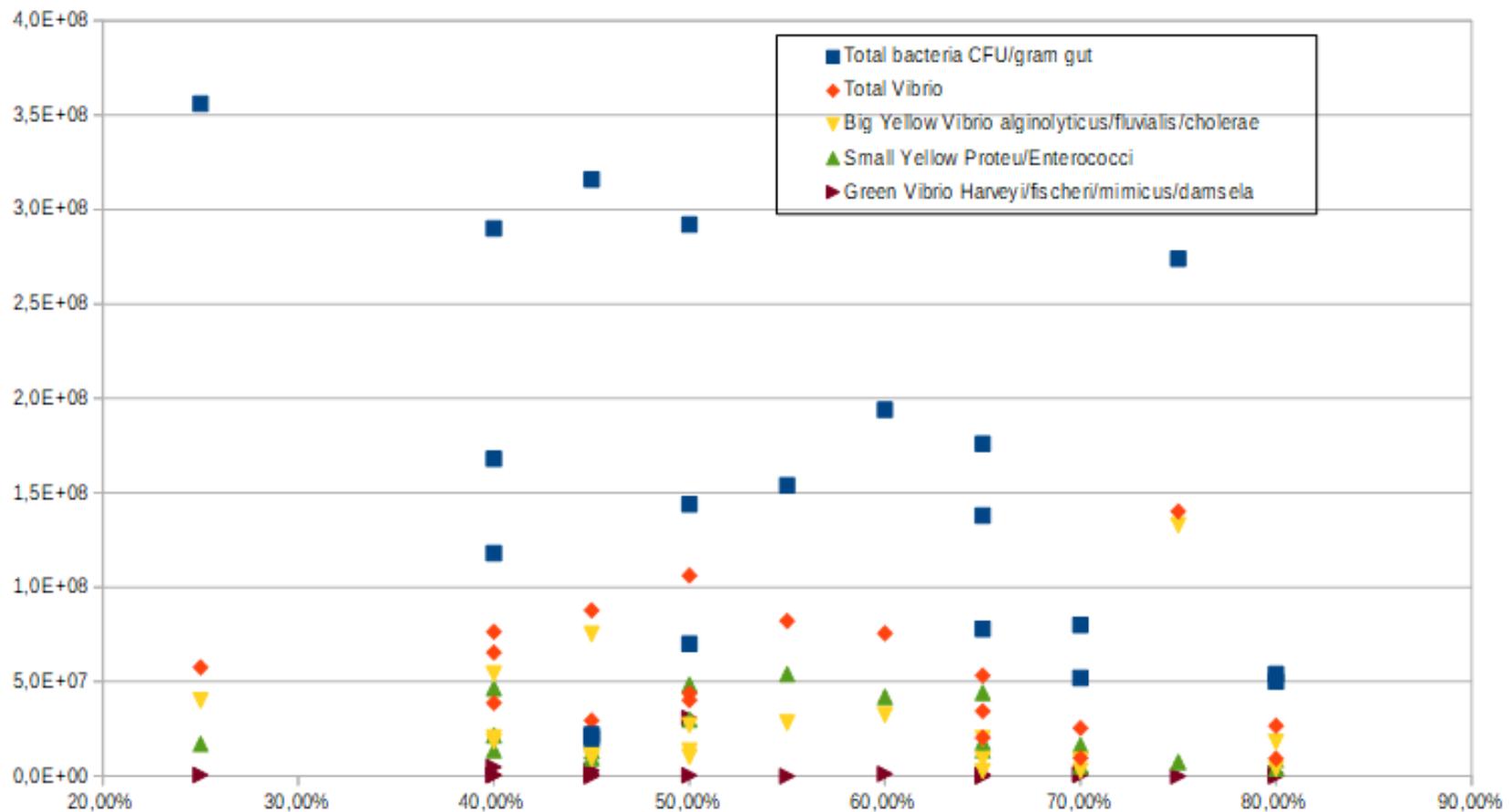
- Presence of pathogens
- Shrimp are weakened by environmental conditions
- Immune system not strong enough to defend shrimp
- Shrimp are attacked by a combination of the main pathogen + opportunistic pathogens
- Molting is a critical period



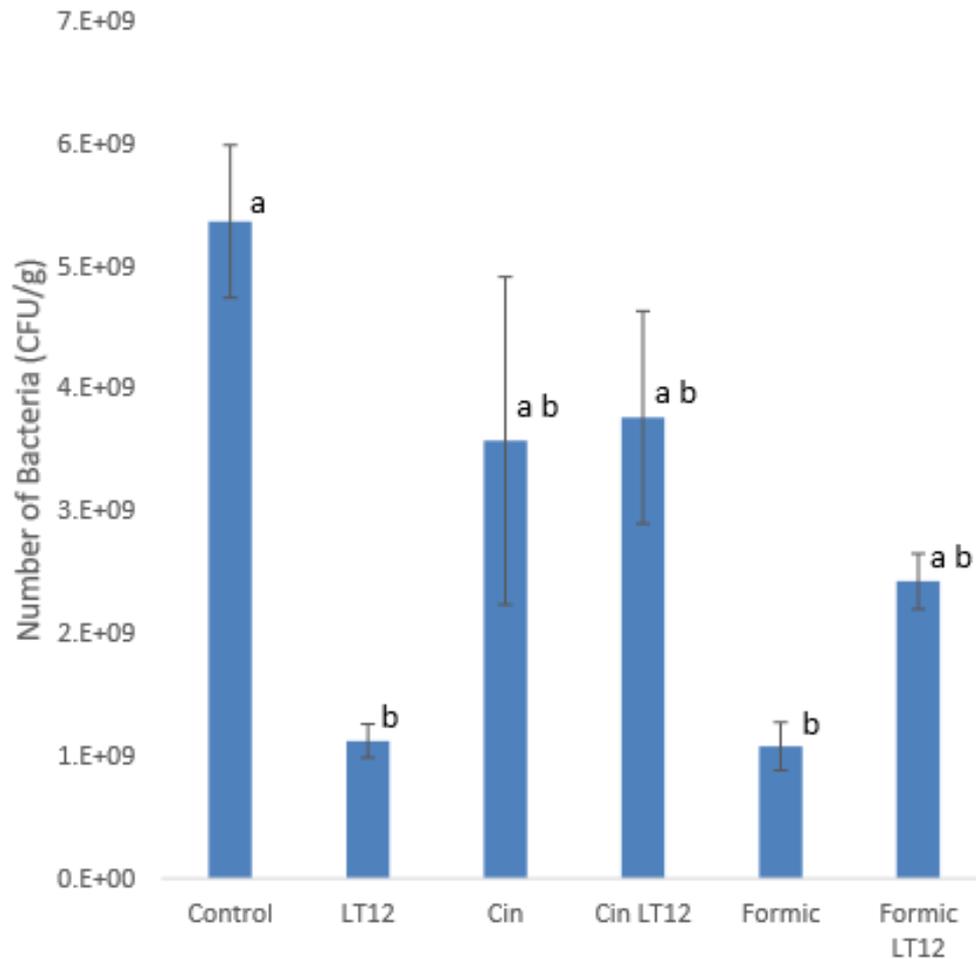
Utilisation of commercial and experimental additives to reduce vibrio in the intestine of shrimp

	Total bacteria	Total Vibrio	Big Yellow	Small Yellow	Green	survival
control	118666667	53000000	29333333	21733333	1933333	43,33%
comm1	114666667	48333333	13266667	34533333	533333	63,33%
exp	103333333	23006667	10733333	11333333	940000	71,67%
comm2	218666667	59933333	37200000	21600000	1133333	55,00%
grower 1A	283000000	123200000	79900000	27900000	15400000	62,50%
grower 1A+EO	151333333	33933333	17266667	16000000	666667	45,00%
grower1A+EO+PB	120000000	48400000	17933333	30066667	400000	51,67%

Utilisation of commercial and experimental additives to reduce vibrio in the intestine of shrimp



Utilisation of various additives on TBC in the shrimp intestine



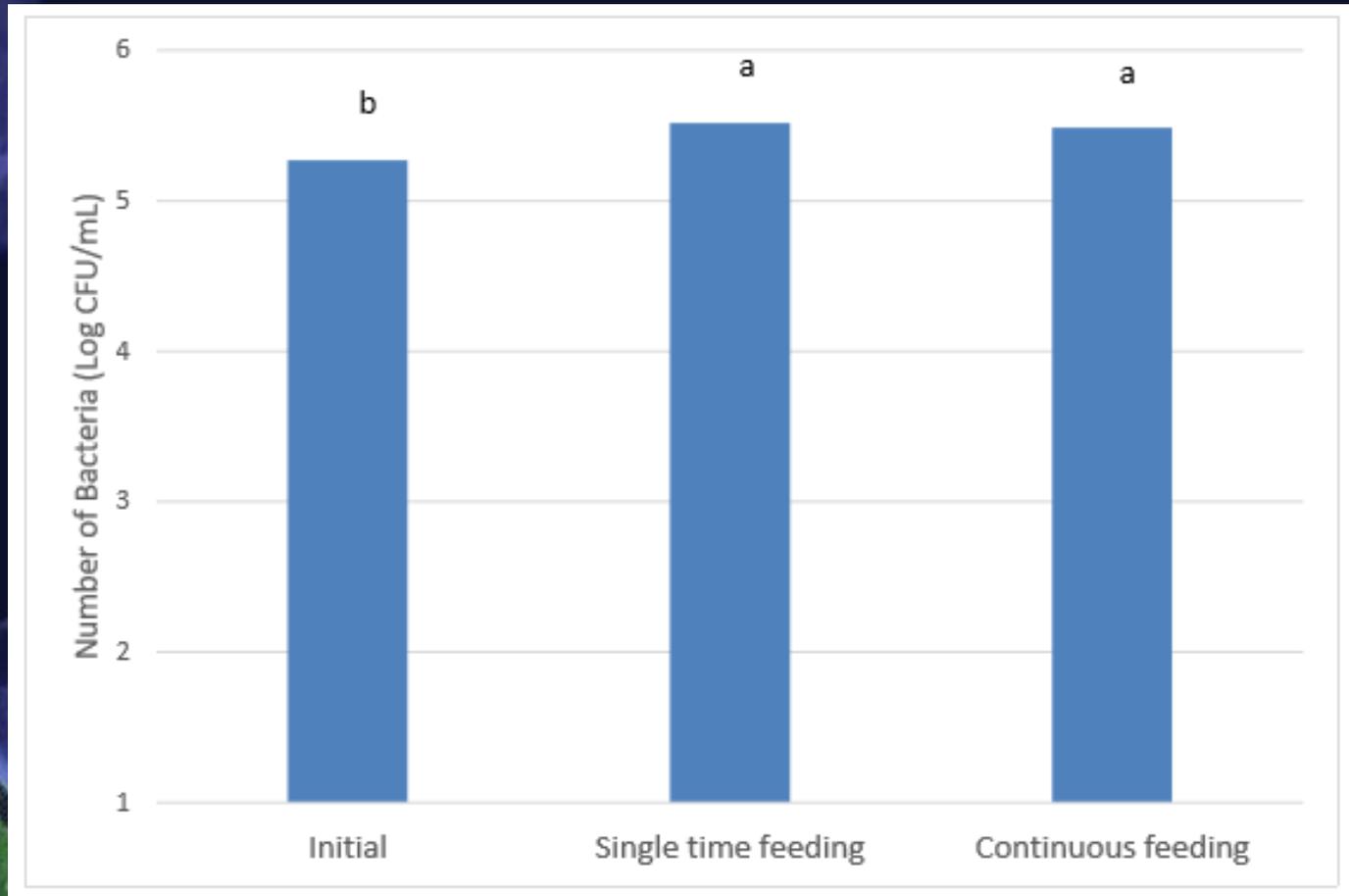
Influence of water source and utilisation of a *Bacillus* probiotic on growth and survival

water	probiotic	AVG start	AVG end	g/week	FCR	survival
new		2,84	5,83	1,00	1,40	84%
new	in water	2,57	5,13	0,85	1,28	94%
recycled		2,42	6,02	1,20	0,92	92%
recycled	in water	2,66	6,07	1,14	1,03	90%
new	in feed	2,30	5,44	1,05	0,99	96%

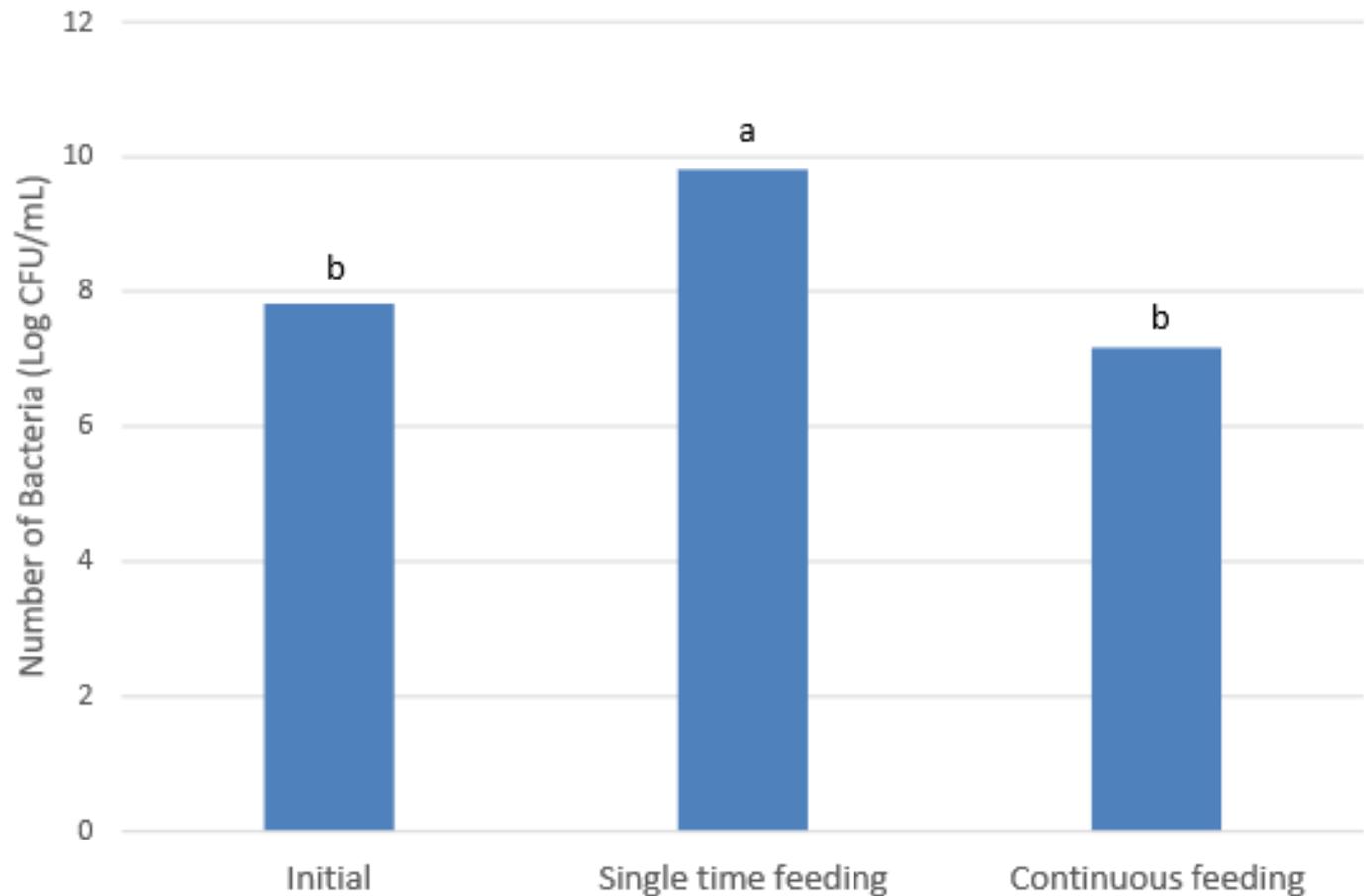
Feeding Frequency

	Feeding regime	Growth (g/week)	FCR
Week 1	continuous	1,67	1,46
Week 2	continuous	1,74	1,03
Week 3	4 times/day	1,38	2,62
Week 4	4 times/day	1,14	3,75
Week 5	2 times/day	0,83	2,58
Week 6	2 times/day	0,99	4,59

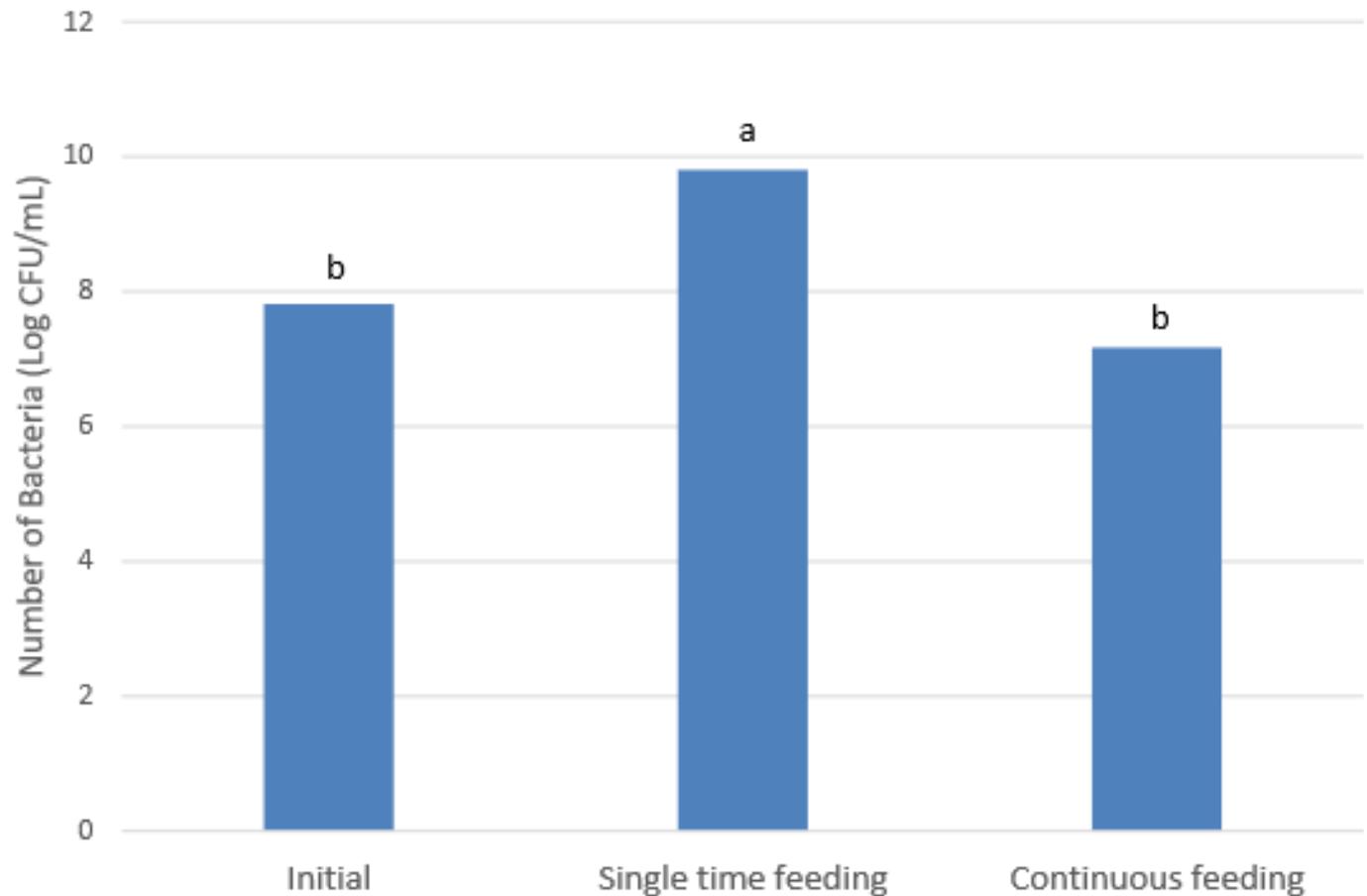
Influence of feeding regime on total bacteria count in the shrimp intestine



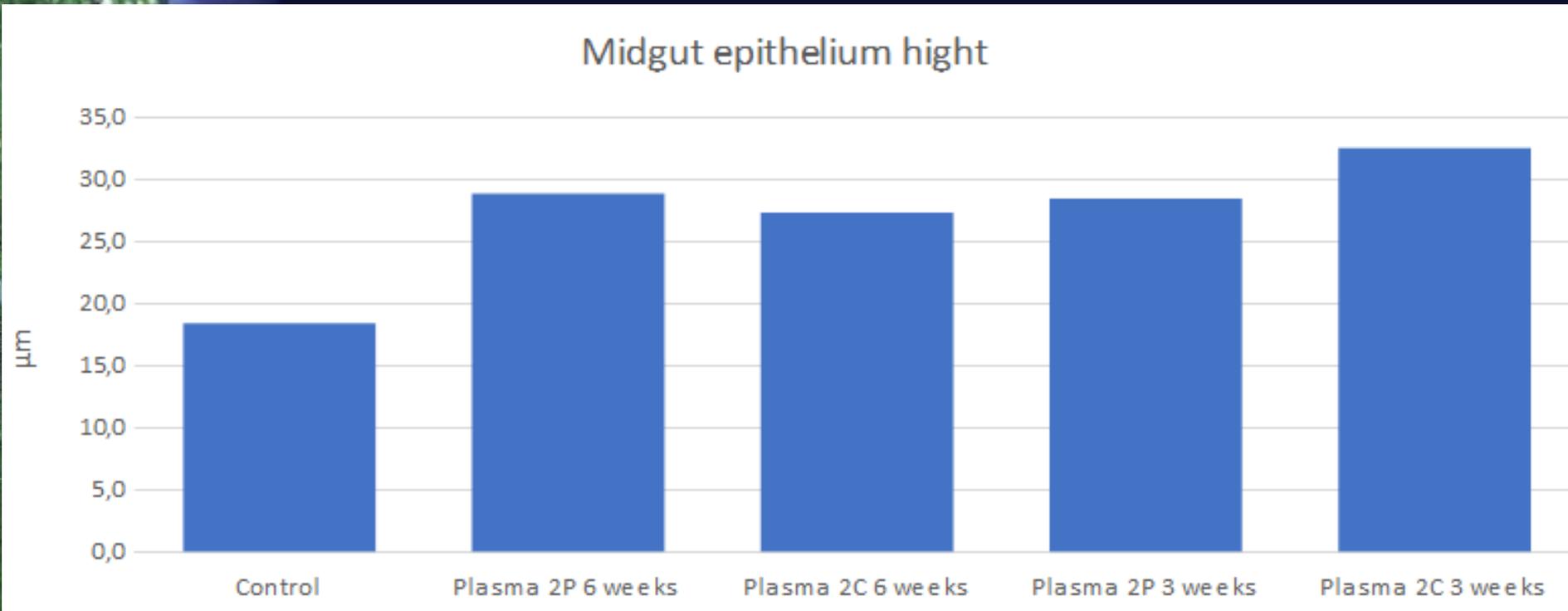
Influence of feeding regime on vibrio count in the shrimp intestine



Influence of feeding regime on vibrio count in the shrimp intestine



Replacement of fishmeal with Plasma powder



Thank you !



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