Advantages of liver protection in aquaculture

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1.Importance of Liver Protection

Liver of fish is one of the most important organs to maintain physiological function, liver diseases usually caused by various cases, such as overfeeding, excessive frequency of medication, and parasitic infection. Also the fish liver has no nerve distribution, even meeting some serious problems, fish cannot feel any pain. Therefore, when symptoms appears, the liver has been damaged seriously.

When liver disease occurs , volume of blood that went through the liver decreased, then liver comes to white in color and some part may come to other color nonuniformly. Liver also affect the intestine, If liver diseases happens, transport of biliation will be blocked, pressure of intestine increased and cause many problems such as weaken the intestinal gurgling and intestinal inflatable, finally cause enteritis and immunity decreased.

2. Advantage of Liver protect.

Aquaculture is a kind of complex and long-term investment, any reason lead to the death of fish will increase the cost of culture. During the total culture process, cost of feed accounting about 60% normally。Usage of liver-protected product can increase the digestive and utilizable performance effectively and decrease the loss of feed, also it can reduce the mortality.

3. Application of liver protection in culture of Philippines Milkfish.

3.1 Current situation

Main species of Philippines is Milkfish, mainly cultured in marine cages, the local area is

divided into southern and northern two parts. The southern part is new area with good water quality, survival rate there normally over 95%. The northern part is old area, water quality is relatively worse, mortality and FCR are higher than the southern part. All the milkfish in northern part are raised in cages, diameter of that cage ranges from 17 to 19 meters, depth ranges from 5 to 12 meters, each cage can stock 45000 to 60000 tails of fish.

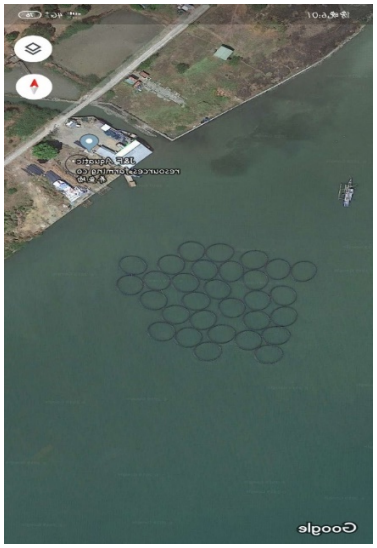

Fig.1 Marine cages in Panglit area.

Through a follow-up research on local culture by Hinter service team, we diagnosed that the main problem caused by series liver and intestinal diseases.

When raising fries, farmer did not domesticate and feed them normally. When transport to the cages, local workers feed the juvenile fish by large quantity and improper feed. When coming to the premetaphase stage, the tolerance of liver and intestine became weak and several pieces of death occurs seldomly, which will cause the appetite of fish reduced and finally lead to mass mortality.

Fig.2 Transport fingerling from farmland to cages.

Fig.3 Overfeeding and dead fish.

3.2 solution

Making new plans for feeding & Adding Hinter #1020 for contrast experiment after transporting juvenile fish to the cages.

3.3 Result

(1) 6 hours after feeding, all the feed in experiment group was digested already, for the blank group, the feed haven't been used thoroughly.

Fig.4 Digestive situation after 6 hours of feeding (experiment group).

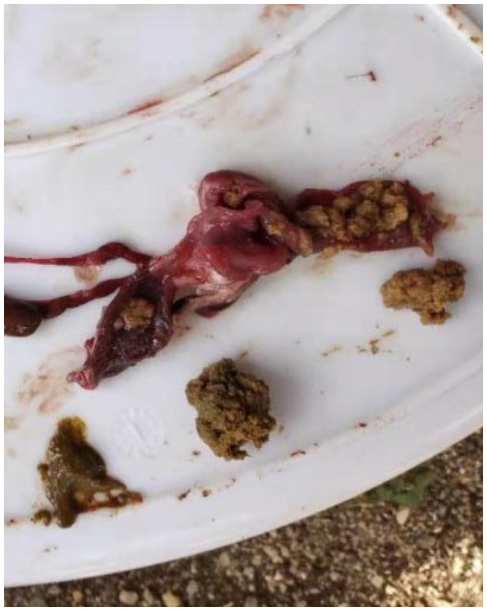

Fig.5 Digestive situation after 6 hours of feeding (blank group).

(2) After 3 months of feeding , compared with blank group, liver-intestine system of experiment group look better. For the blank group, petechia appears on surface of liver, lipid deposit on the walls of mesentery, bile start flows into abdomen. For the experiment group, none mesentery fat was found, gallbladder works well, the gut is more resilient.

Fig.6 visceral mass of experiment group

Fig.6 visceral mass of blank group

(3) Survive rate and FCR of experiment group is lower than blank group.

	No.	Original pieces	Cultured Days	Feed customed/Kg	Harvest pieces	FCR	SR
Experiment Group	22	45000	269	54900	43699	2.26	97.11%
	23	45000	264	53025	43363	2.21	96.36%
Blank Group	24	45000	251	60525	40895	2.33	90.88%
	25	49430	251	60950	41413	2.34	83.78%

4.Analysis

Due to the #1020 additives applied in the feed, liver-protected items contained in it

preserved the liver-intestine system effectively, it makes the liver-intestine system healthier and improve the utilization of feed, reduce the fat deposit on mesentery, finally lead to the result, better liver and better intestine, low mortality and low FCR.

Though the result of blank group worse than experiment group, but the result still better than other local ocean farmland cages. Reason comes that we control the feed quantity and make a new feeding plans according to the local environment, we tried our best to strengthen the tolerance of fish liver and intestine without any other products, also me make local workers realized the importance of scientific feeding method and culture plans.

5.Conclusion

AS a high-tech service enterprise dealing with aquatic feed premix and additive products, as well as R&D, production, marketing and integrated solutions for aquafeeds, Hinter always works for providing the best products for clients. As an aquatic-service master, we can also output our professional aquaculture technique as well as plan and strategy for aquatic-farmland. What we believe is that we can bring more values for client by our effort and knowledge.