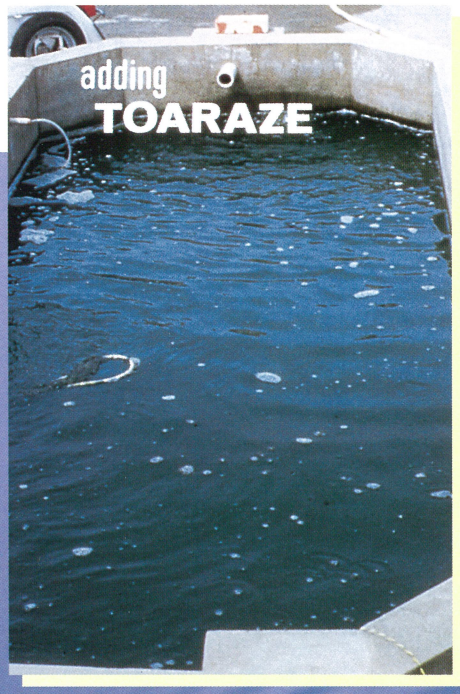
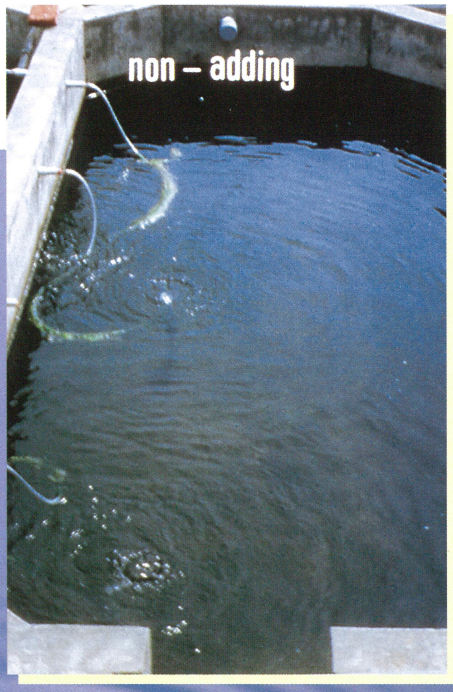
FOR AQUACULTURE USE

TOARAZE®

Control of water pollution

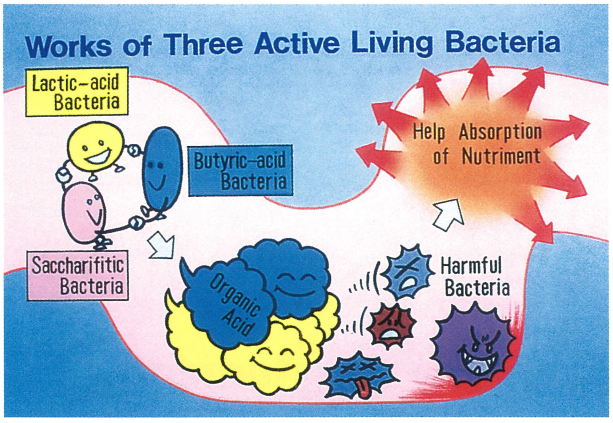
Clean water is essential for quality fish farming.



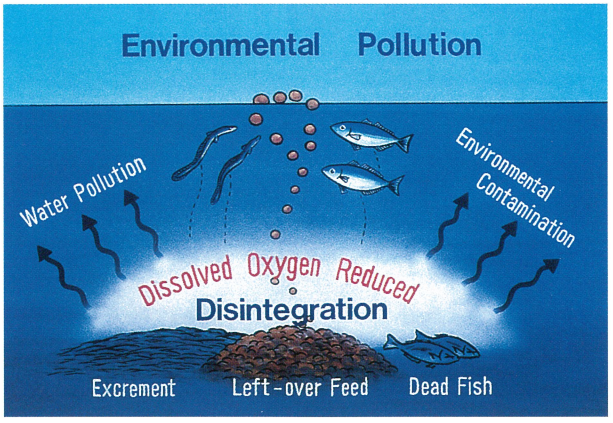


TOA PHARMACEUTICAL CO., LTD.

For raising healthy fish

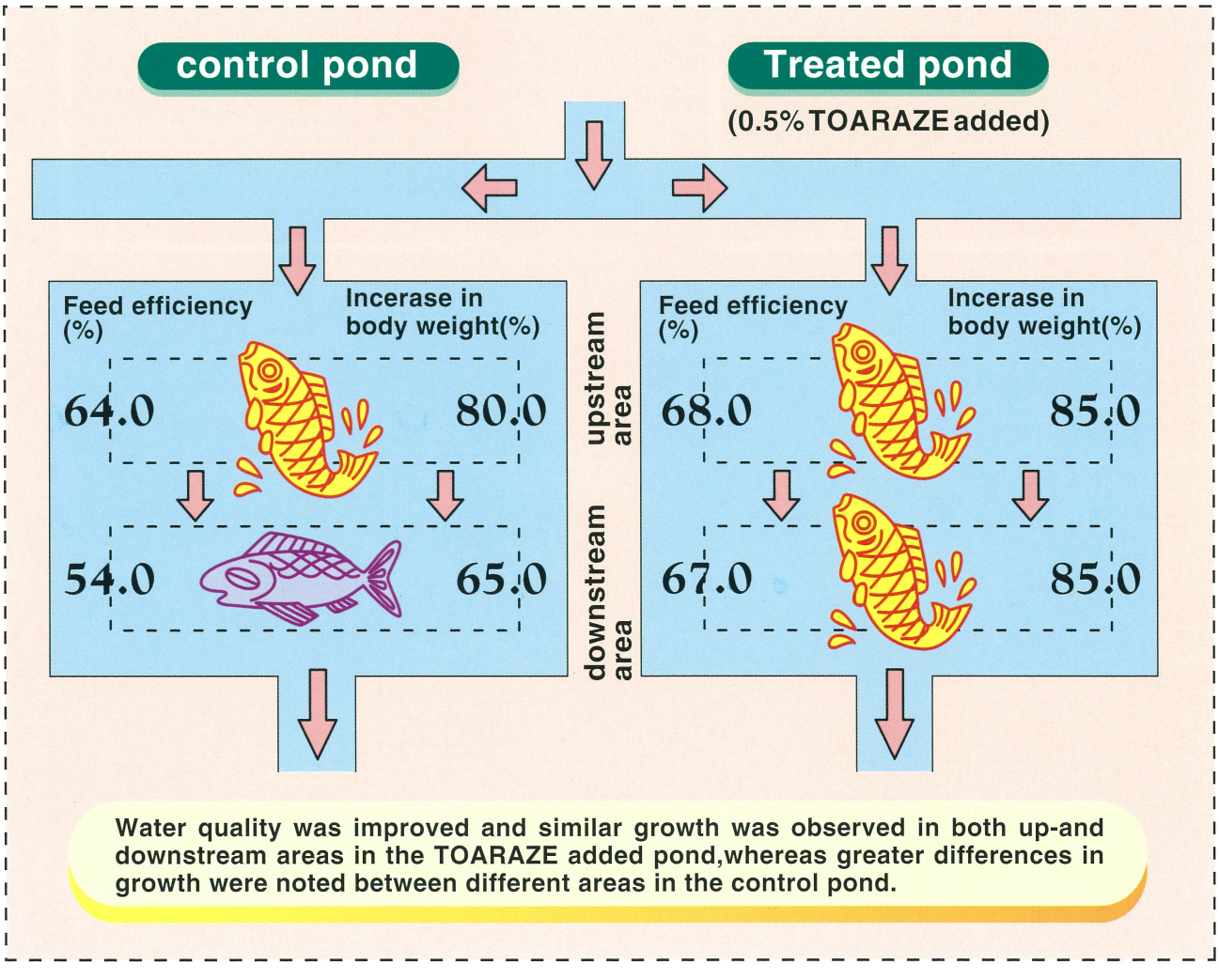


Active bacteria (lactic acid bacteria, butyric acid bacteria and amylolytic bacteria) and powerful digestive enzymes in TOARAZE improve the effects of feed, increase the amount of feed consumed by fish, and prevent water pollution: these effects make for healthier fish.

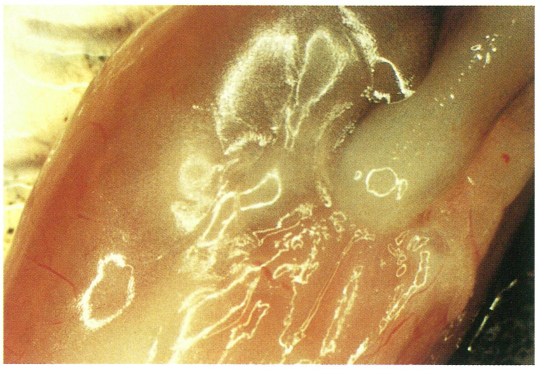


The environment of the breeding pond is degraded when oxygen in water is consumed during decomposition of pollutants such as fish feces, especially those containing poorly or undigested feed, and dead fish. An effective measure for reducing water pollution and enhancing the health of fish is to reduce the amount of uneaten feed and fecal matter by improving feed consumption and promoting the digestion and absorption of consumed feed.

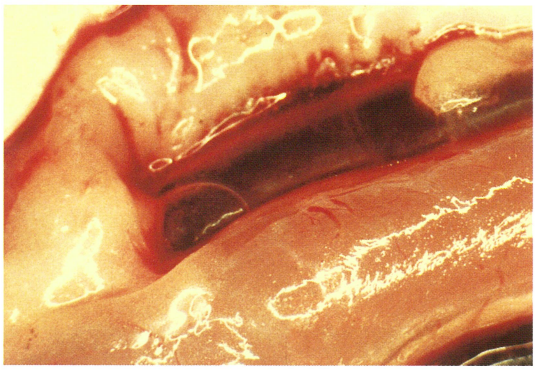
Effect of TOARAZE to control water pollution (in the case of rainbow trout)



Effects of TOARAZE



adding-TOARAZE



non-adding

Improved gastrointestinal condition in eels : The gastrointestinal condition was good in many eels in the TOARAZE-added pond, whereas punctuate hemorrhage and redness were more frequently observed in the control pond.

Increase in feed consumption by shrimp : Shrimp gathered to the feed containing TOARAZE (left) whereas a considerable amount of feed was left uneaten (right) when TOARAZE was not added, indicating that TOARAZE suits shrimp's taste.

Improved growth of shrimp: The stripe pattern on the body of netted shrimp from breeding ponds was clear for shrimp raised in TOARAZE-added ponds and unclear on a dark body for shrimp raised in the control pond (right). Both quality and production of shrimp were obviously improved by the addition of TOARAZE.

The result of the breeding experiment of the medium size of the prawn

Experimental period : 100days
Feed : 0.5% of the TOARAZE were mixed into the commercial artificial composite feeds while the sole artificial feeds without the TOARAZE as the control of the experiment.

	Control		Experiment	
	NO.1 pond	NO.2 pond	NO.3 pond	NO.4 pond
Released individuals	100	100	100	100
Average body weight at the start of the experiment	9.78	9.65	9.16	10.43
Total body weight at the end of the expriment	1762	1987	2212	2662
Survived indivisuals	66	69	81	85
Average body weight at the end of the experiment	26.7	28.8	27.3	31.3
Survival rate(%)	66	69	81	85
Total feed weigt added to the ponds	3612	3715	3663	4431
Increased total body weiht	1116	1320	1470	1775
Feed coeffcient	3.23	2.81	2.49	2.50

Tainan Fish Culture Branch.
Taiwan Fisheries Reseach Institute. Tainan R.O.C.

Inhibition of harmful bacteria

It has been confirmed that the lactic acid bacteria, butyric acid bacteria and amylolytic bacteria in TOARAZE have inhibitory effects on pathogenic bacteria in various parts of the gastrointestinal tract when used alone or together so that they act in symbiosis.

Based on the digestive physiology of fish, TOARAZE is formulated with alkaline protease, which has properties similar to proteases secreted by the pyloric appendage and intestine of yellowtails, young yellowtails, sea bream, carp, sweet fish, rainbow trout and other fishes.

Mixed feed for aquaculture TOARAZE

Name and amount of feed additives contained	Protease (alkaline protease) Lipase
Raw materials	Lactic acid bacteria (*Streptococcus faecalis* T-110) Butyric acid bacteria (*Clostridium butyricum* TO-A) Amylolytic bacteria (*Bacillus mesentericus* TO-A)
Dosage	Add 5 -10 g (0.5 - 1%) of TOARAZE for aquaculture in 1kg of feed.
Storage	Store the product in a cool and dark place.
Packaging	20kg

For more information,please contact

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