Shrimp Culture in India

The Goal

To increase the harvest biomass and the return on investment, the shrimp farmer must sustain a higher stocking density in the grow-out ponds.

The therefore required increases in feed quantity and the resulting higher levels of waste material should not lead to a deterioration in water quality nor increase the rate of viral infection or disease.

Trial Results - ASA T conc

ASA T conc is a mixed culture of different, naturally occuring microorganisms, that have successfully been used to improved water quality in ponds and lakes.

The microorganisms dissolve pollutants and reduce the concentration of Ammonia and Nitrite, which are toxic to fish.

In 1998, **ASA T conc** was testet on the shrimp farm of Magnum Estates Private Ltd, located near the city of Balasore, along the eastern coast of India.

During the period of the cuture, 4 Ponds with a size of approximately 8.000 m² where analytically researched:

3 comparison ponds with a standard stocking density of 10 shrimps per m² and 1 test pond with a stocking density of 33 shrimps per m² to which was added ASA T conc.

The Results:

with the use of ASA T conc

- **higher stocking densities could be achieved**
- **the harvested biomass was signicantly increased**
- **the use of antibiotics could be avoided**

Furthermore higher stock densities did not lower growth rates, survival rates or feed conversion ratios. The level of toxic pollutants in the water did not increase.

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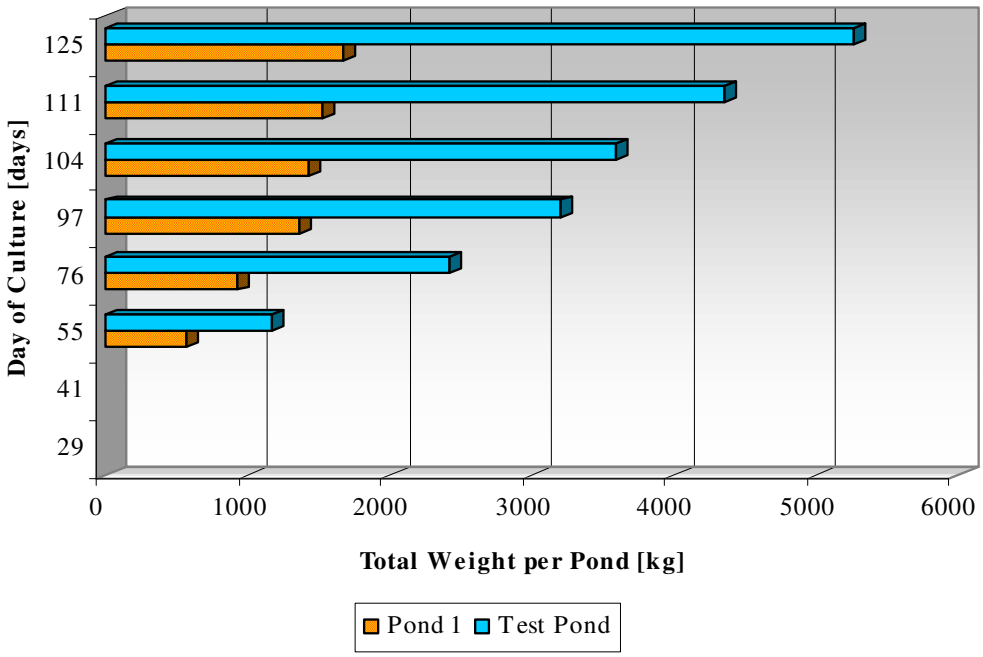
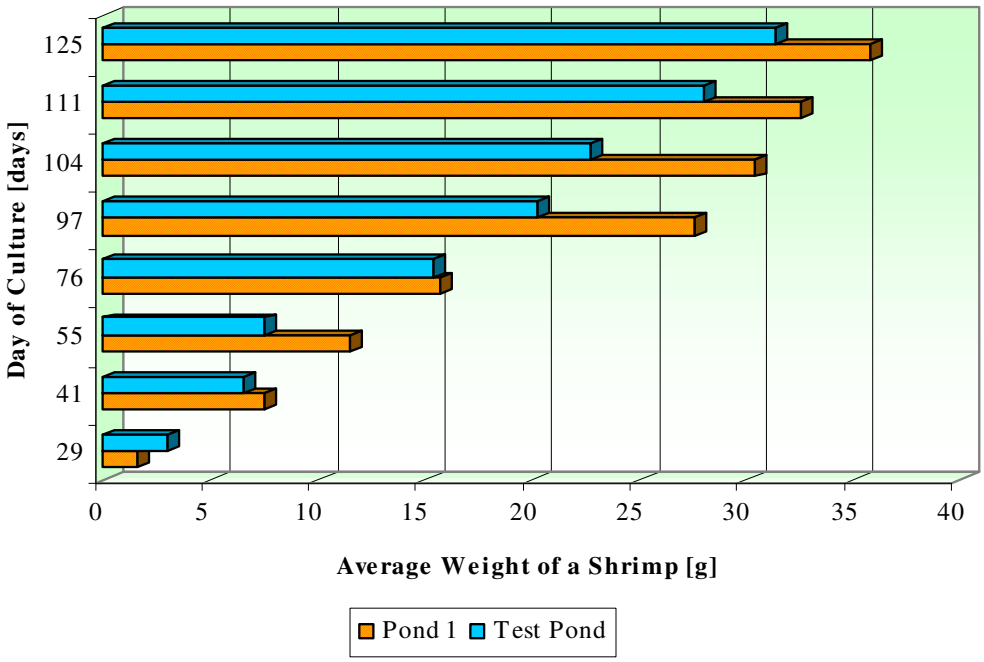
Comparison of a standard pond with the test pond treated with ASA T conc

Output increase from higher Stocking Density



Good Rate of Growth given triple the Stocking Density of a standard pond



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Results of the trial of ASA T conc in the Shrimp Culture of India

		Growth			Feed Usage		Water Analysis				
	Days of Culture [Days]	Average Weight of a Shrimp [g]	Total Weight per pond [kg]	Survival Rate [%]	Feed Conversion Ratio	Feed Quantity [kg]	NH_4 [mg/l]	NO_2 [mg/l]	NO_3 [mg/l]	PO_4 [mg/l]	O_2 [mg/l]
	29	1,6									
	41	7,5									
Pond 1	55	11,5	572	64	1,0	557	0,2	0,1	5	0,2	5,1
	76	15,7	927	64	0,9	1068	0,3	0,1	10	0,5	4,8
Stocking Density	90	25,3	1254	64	0,9	1472	0,3	0,4	3	0,1	
10	97	27,6	1368	64	0,8	1670	0,3	0,4	3	0,1	5,0
Pieces / m²	104	30,4	1425	61	0,8	1825	0,3	0,4	3	0,1	
	111	32,6	1528	61	0,8	1999	0,4	0,2	5	0,1	
	118	34,4	1614	61	0,7	2178	0,5	0,1	5	0,2	5,1
	125	35,8	1680		0,7	2379	0,3	0,2	5	0,1	
	30	2,2									
	42	6,4									
Pond 7	56	9,7	584	78	1,2	482	0,2	0,2	10	0,2	5,1
	77	17,6	831	61	0,8	990	0,5	0,1	5	0,5	4,8
Stocking Density	91	22,3	1055	61	0,7	1436	0,3	0,2	8	0,2	
10	98	24,9	1176	61	0,7	1658	0,3	0,2	3	0,2	5,0
Pieces / m²	105	27,0	1276	61	0,7	1878	0,3	0,2	8	0,2	
	112	30,0	1420	61	0,7	2130	0,3	0,1	4	0,1	
	119	33,0	1560	61	0,7	2375	0,4	0,1	5	0,2	5,0
	126	34,4	1625		0,6	2627	0,8	0,3	3	0,1	
	28	1,5									
	41	5,8									
Pond 23	56	10,0	472	61	0,9	511	0,1	0,1	5	0,1	5,0
	76	17,2	1040	78	1,0	1030	0,5	0,1	5	0,8	4,8
Stocking Density	90	23,2	1403	79	0,9	1527	0,3	0,1	4	0,1	
10	97	25,8	1561	79	0,9	1818	0,3	0,1	6	0,1	5,0
Pieces / m²	104	28,2	1780	82	0,8	2137	0,3	0,1	5	0,1	
	111	31,7	1998	82	0,8	2446	0,3	0,1	3	0,1	
	118	34,0	2142	82	0,8	2753	0,4	0,2	5	0,2	5,2
	125	36,0	2276		0,8	3019	0,3	0,1	3	0,2	
	34	3,0									
	47	6,6									
Test Pond	60	7,5	1174	62	0,9	1305	0,2	0,2	10	0,3	5,7
	81	15,4	2429	62	0,9	2761	0,3	0,1	5	0,5	4,7
Stocking Density	95	20,3	3200	62	0,8	4175	0,4	0,1	8	0,1	
33	102	22,8	3595	62	0,7	4977	0,3	0,3	4	0,7	3,5
Pieces / m²	109	28,0	4358	66	0,8	5830	0,3	0,3	5	0,7	
	116	28,9	4844	66	0,7	6698	0,4	0,2	5	0,2	
	123	31,4	5263	66	0,7	7481	0,5	0,2	7	0,2	3,5
	130	33,4	5600		0,7	8197	0,6	0,1	7	0,2	

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