Enhanced Growth Effects by Inclusion of Pond Floc to Shrimp Diets

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Shrimp grow better in pond water than well water.
What is floc?

Floc is naturally suspended particles in shrimp or fish culture water.
Floc Composition

Microorganisms (46%)
- Algae
- Bacteria
- Fungi
- Ciliates
- Amoebae
- Rotifers
- Worms
- Flagellates
- Protozoans
- Metazoans
- Nematodes
- Gastrotrichs

Detritus (54%)
- Feed pieces
- Feces
- Dead microorganisms
- Shrimp shell
Trial Objective

To determine the effects of adding floc to a control diet on growth and survival of shrimp.
Materials and Methods

Floc sample

Collected from 27 outdoor tanks cultured with shrimp
Materials and Methods

Diet preparation:
Adding 20% intact floc or ground floc biomass to control diet (40% crude protein, 9% crude lipid)

Shrimp feeding trial:
Indoor lab with flow-through well water using glass aquaria (52-L; 76 cm x 31 cm x 31 cm), and each aquarium was stocked with 12 shrimp (1.00 ± 0.02 g).
Research Results

Fig. 1: Microscopic appearance of brown and green floc samples

<table>
<thead>
<tr>
<th>Brown Floc - (400X)</th>
<th>Green floc - (400X)</th>
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<tbody>
<tr>
<td>Raceway No-1</td>
<td>Raceway No-2</td>
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- Diatoms
- Thalassiosira
- Navicula
- Chaetoceros
- Cyst
- Rotifer
- Detritus
- Nannochloropsis
Floc on Growth Rate

![Bar chart showing growth rate for different test diets: Control, Intact Floc, Ground Floc, Rangen. The chart indicates that the Intact Floc diet has the highest growth rate, followed by the Ground Floc diet, with the Control and Rangen diets having lower growth rates.]
Floc on Shrimp Survival

Survival (%)

Test Diet

Control  Intact Floc  Ground Floc  Rangen
Inclusion of whole floc in shrimp diets significantly improved shrimp growth rate and did not affect shrimp survival.