
Selma M. Wurst, Dr. Ingo S. Wehrtmann*, Dr. Ulfert Focken

**Introduction**

In Costa Rica, there are many freshwater bodies appropriate for aquaculture purposes, that remain unused so far. They are particularly suitable for the cultivation of the freshwater prawn *Macrobrachium rosenbergii*. Such cultivation has the potential to rise the income of smallholders, especially in the case of organically produced prawns that are high-value-products. The aim of this study was to test protein-rich feed ingredients for organic production of freshwater prawns. This ingredients were fish meals from regional by-catch and shrimp head meal, which is a locally occurring processing waste.

**Methodology**

- Two test diets were compared to a commercial shrimp feed used for the cultivation of marine shrimp (control ‘Nicovita’) and to a pellet feed for horses used in the only existing prawn farm in Costa Rica (control ‘horse’).
- Randomized set-up of three outdoor ponds, each with four net cages of 2 m² for a period of 28 days.
- Monitoring of growth and feed utilization of *M. rosenbergii* and the water quality parameters of the experimental ponds.

**Results**

- Water quality parameters met the prawns’ requirements.
- Body Weight Gain and Specific Growth Rate of control ‘horse’ significantly different from other three treatments.
- Test diet 1, test diet 2 and control ‘Nicovita’ met the nutritional requirements of *M. rosenbergii*.

**Conclusion**

The tested by-products and processing wastes from coastal shrimp fisheries are adequate protein sources for *M. rosenbergii* and confirm to the regulation of organic farming. Based on the results there is a possibility to rise the income of Costa Rican smallholders.

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**Contact:**

Dr. Ulfert Focken  
Institute for Animal Production in the Tropics & Subtropics  
University of Hohenheim (480B), 70593 Stuttgart (Germany)  
E-mail: focken@uni-hohenheim.de

*Dr. Ingo S. Wehrtmann*  
University of Costa Rica, Escuela de Biología  
2060 San José (Costa Rica)  
E-mail: ingowehtmann@gmx.de