

**D-13 Water quality of Dutch canal from Deduru Oya estuary to Mundel lake:  
area of extensive shrimp farming**

T N Ariyananda<sup>1</sup>, E I L Silva<sup>2</sup>

<sup>1</sup>Intermediate Technology Development Group, Colombo 5, <sup>2</sup>Institute of Fundamental Studies, Kandy

The Dutch canal in the North-West coast of Sri Lanka is the main source of water to the surrounding shrimp farms and is also the main water body receiving the effluent from the farms. This study looks at the changes in water quality along the Dutch canal from Deduru Oya estuary to Mundel lake over the period November 1995 to October 1996. Monthly samples were taken from 8 sites, 3 sites were chosen from an area of low shrimp farm intensity and 5 sites from an area of high farm intensity.

Results showed that salinity varies along the Dutch canal with high salinity recorded at the Deduru Oya estuary end and low salinity at the Mundel end. Salinity was highest in August and lowest in October after the sand bar was removed at the estuary mouth. No significant difference in pH or temperature were seen between sites. Chlorophyll-a and dissolved oxygen indicate high levels of primary production at sites of high farm intensity. Temperature, BOD, suspended solids, salinity recorded in the canal during this survey was below the acceptable range for *Penaeus monodon* culture.

This survey indicates eutrophication due to high nutrient input from effluent in areas of high intensity of shrimp farms. Poor water quality in the Dutch canal has resulted in outbreak of disease in shrimp ponds causing severe environmental and economic losses to the area. Eutrophication and sediment loading to the Dutch canal are likely to have more severe long term effects on the natural fauna and flora of this water body.