

D-46 Investigations on the disease out-breaks in shrimp culture systems developed on problem soils

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Rapid expansion in the shrimp culture industry in Sri Lanka is increasingly constrained by problems related to disease out-breaks. Sri Lanka lost around Rs. 1000 million in foreign exchange during the year 1996 due to disease out-breaks. The stress generated by adverse soil conditions play a very significant role in provoking disease out-breaks. Identification of different problem soils, their properties useful in managing and identification of farm level risk factors affecting the out-break were the main objectives of the present study.

Four acid sulphate soil classes (sulphidic sand, unripe sulphidic muck, unripe sulphidic clay, ripe clay with sulphidic subsoils) and five acid sulphate soil classes (acid sulphate muck, raw acid sulphate clay, half ripe clay with acid sulphate sub soils, sand with acid sulphate sub soil) were identified in the study. The soil class ripe clay with sulphidic sub soils is relatively less harmful for shrimp culture. Unripe sulphidic muck and acid sulphate muck are unsuitable for shrimp farming. Unripe sulphidic clay, raw acid sulphate clay, half ripe clay with acid sulphate sub soil can be used for shrimp culture.

Incidences of antennary rot, black spot, black-brown gill syndrome, rolling carapace, soft shell syndrome, tail rot, size disparity and abdominal deposits on the ventral side of the body were significantly higher in shrimps cultured under acid sulphate soil environments. There was no difference in the occurrence of white spot disease in ponds on acid sulphate and normal soils.

The mean total shrimp production of shrimps in acid sulphate and potential acid sulphate ponds (2200 kg/ha) was less than those on normal soils (3300 kg/ha). High concentrations of iron and manganese were observed in gills of cultured shrimps on acidic soils.