

# ACIAR Soil Analytical and Experimental Laboratory

## *Supporting Sustainable Aquaculture Research in Indonesia*

### **Who we are and what we do:**

Soil assessment and management are important for sustainable brackishwater aquaculture production. The chemical and physical properties of soil influence pond water quality and the engineering properties of dykes as well as growth, survival and the health of shrimp and fish. In particular, soils can influence nutrient dynamics, water alkalinity, water pH, microbial processes and the chemical state of metals in aquaculture ponds. Indonesia has over 7 million ha of acid sulfate soils as well as many other problematic soil types that can limit brackishwater aquaculture production. There is a strong association between poor pond production and the quality of soils because water is a universal solvent and can be contaminated by metals and acidity originating from the soil environment.



**The ACIAR Soil Analytical and Experimental Laboratory** at the **Research Institute for Coastal Aquaculture** in Maros is the premier soil testing and research laboratory for sustainable aquaculture in Indonesia. The laboratory was jointly established by ACIAR and the Government of Indonesia in 1998 and upgraded in 2006 to provide a national soil testing service and research support for soil-related aquaculture programs. **The analytical team includes:** Rosiana Sabang, Sutrisyani, Kamariah, Rahmiyah and Darsono.

The laboratory is managed by highly skilled soil analysts, technicians and researchers trained by UNSW researchers and Gol programs. The laboratory regularly conducts the following soil tests and experimental work:

- Actual and potential acidity
- Estimation of pyrite concentrations in acid sulfate soils
- Cation exchange capacity
- Bulk density
- Hydraulic conductivity (in situ)
- Dispersion testing
- Particle size analysis and soil texturing
- Sulfur analysis
- Major elements including metals and metalloids
- Soil colour
- Soil classification
- Soil structure (in situ)
- Nutrients
- Linear shrinkage
- Sodicity assessment
- Acid sulfate soil identification and characterisation
- Soil pH, Eh and EC
- In situ soil respiration
- Calculation of lime and fertiliser requirements
- *Klekap* production potential in different soil types
- Soil remediation experimental work

For more information on soil testing services and research support, please contact Ms Rosiana Sabang or Dr Akhmad Mustafa on +62 411 371 544 ([akhmadmustafa@yahoo.com](mailto:akhmadmustafa@yahoo.com)) or Dr Jes Sammut on +61 2 9385 8281 ([j.sammut@unsw.edu.au](mailto:j.sammut@unsw.edu.au)). **Address:** Dr Akhmad Mustafa, Research Institute for Coastal Aquaculture, Jl Makmur Dg Sitakka No. 129, Maros, South Sulawesi, 90512, Indonesia.



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