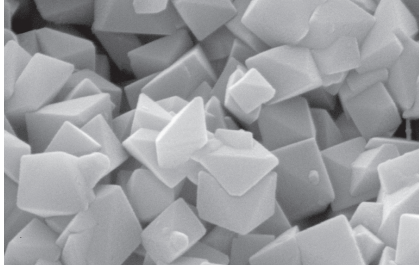


eal

Environmental Analysis Laboratory

Southern Cross University



Method selection for assessment of actual and potential acid sulfate soils

EAL – Southern Cross University’s Environmental Analysis Laboratory – was involved in the research and development of many of the current acid sulfate soil testing procedures.

The availability of two testing suites can be confusing to managers new to acid sulfate soils. EAL encourages the use of the Chromium Suite over the SPOCAS Suite for a number of reasons.

The Chromium Suite provides a clear and unambiguous assessment of actual and potential acid sulfate soils with direct measurement of sulfide, providing accurate liming rates. It has the following advantages:

- Very high accuracy and reproducibility down to reliably low detection limits (i.e. 0.005%S)
- No interference from organic matter, sulfate minerals or metal ions
- Simple unambiguous results which can be compared to published guidelines
- Low costs
- Quick turn-around time
- Accurate post liming validation when combined with ANC

In addition to the Chromium Suite acid volatile acidity can be measured on monosulfidic materials (MBO).

There are advantages to the TPA component of the SPOCAS Suite. Additional post liming verification can be provided when the Chromium Suite is complimented with TPA analysis (SPOCAS-Plus pack). This new pack has the reliable sulfide determination of the Chromium Suite with the acid trail advantages of the SPOCAS Suite.

To support this stance, EAL refers to Ahern et al. (2004):

‘At present, (sulfur by the Chromium Suite) provides the most reliable and direct measure of reduced inorganic sulfur over the wide range of values encountered in ASS. ... The SCR method is particularly recommended for measuring sulfide contents close to the action limits, and on soils with appreciable organic sulfur.’

The diagram over page is also sourced from the ‘Acid Sulfate Soil Laboratory Methods Guidelines’ (Ahern et al. 2004) and describes work flows for the Chromium Suite

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Chromium suite: flow chart

Figure A2.2: Flow diagram for Chromium Suite

