

## **Alleviating aluminium toxicity on an acid sulphate soils in Peninsular Malaysia with application of calcium silicate**

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### **General comments**

The first issue is the quality of English language and grammar, which is very poor. I strongly recommend revision by a native-English colleague or a professional scientific translation service. The greatest problems of this manuscript are grammar and style, and some sentences are not understandable (eg: "The release of Si to the acid sulphate soils increased their amount in the exchangeable form of nutrient"). Even if scientifically correct, the manuscript should not be published in these conditions.

The abstract needs to be completely re-written. The abstract must briefly state the background, your main objective, a general approach of methods and main results and conclusions. The first half of the abstract is some chaotic and should be rewritten.

In addition to reviewing the language, the main text needs a thorough restructuring and revision. Firstly, I do not understand the objectives or they are not clearly expressed. It seems, as stated (page 2906, line 7), that the aim of this work is to increase production, but this subject is not touched beyond the introduction.

The description of the experiments needs to be completely revised and restructured. The number of samples taken is unknown. The reader does not know where they were collected, when (only the number of days between samplings is known) and why.

Regarding the statistical analysis, the methods used are simple, but some measures of dispersion must be added. This would help to understand some results.

Finally, I believe that this work may be summarized as follows: soil samples were collected and calcium silicate was added. This raised soil pH (decreasing exchangeable Al) and increased the soil Ca and Si contents. Obvious! Moreover, much of the discussion is conducted on the effect of Si on pH (see page 2913, line 7). Si is inert and this makes no sense, since the pH increase is due to other reasons (the addition of Ca). The positive effects of these changes on production are discussed. Although expected, this is just speculation, since no data were provided for crop yield.

The following are some detailed comments on the abstract, introduction, methods and results sections of the manuscript.

### **Detailed comments**

<b>Page</b>	<b>Line</b>	<b>Comment</b>
2904	21-23	I am not sure that 4 references are necessary for this statement.
	25	Pyrite or $FeS_2$ , not both. Delete one. Add a reference to support this statement about soil pH.
2905	11	Substitute "noted" with "reported".
	23-...	Delete the last statement (including the first lines of the next page).

Page	Line	Comment
2906	7-8	Delete the statement "It is the duty ... of rice production". The final part of the introduction section must include a detailed description of your main and/or secondary objectives. Your main objective is not determining the ameliorative effect of applying calcium silicate, but to ameliorate soil acidity in rice-cropped soils in the study area in order to increase yields. For this, your secondary objectives are to study the effects of an amendment (calcium silicate) on soil acidity, exchangeable Al and Ca contents and silicon content.
	14	"Merbok Series" is a local name (or, at least, a classification system is not provided), so delete.
	16-17	How many soil samples? When? What distance between them? What criteria?
	18	How many 500 g soil samples or subsamples?
	19	Rewrite these lines as this: 0 (CS0), 1 (CS1), 2 (CS2) and 3 Mg ha <sup>-1</sup> (CS3) and delete the next sentence.
	22	Were soil samples mixed before or after putting them in pots?
	23	Tap water? What is the composition?
2907	1-5	Move this text to the previous paragraph (may be to page 2906, line 19). Did you analyze the composition? How?
	6	"Subsamples were taken every 30 days throughout the incubation period" is part of the experimental design.
2908	3-4	Refere only to relevant methods and delete "Diagrams ... Microsoft 2010".
	5-24	This text is hard to understand. Part of the information looks like methods ("The studied acid sulphate soil was obtained from a granary area in Merbok (Kedah)") or discussion ("this was due to..."). References and discussion must be avoided in the results section.
2909	4	The Y axis in the figure starts at 3.1.
	17-18	There is something strange as the graphic shows important variations (CS1/D60, for example, is two times CS3/D60). Can you provide any measure of dispersion (eg, standard deviation)?
	21-22	Check this sentence: "Soil [...] were significantly increased..." (soil exchangeable Ca content?).
2010	10-11	"The reduction in exchangeable Al corresponded directly to the amount of Si in the soil". Apart from the statistical issues, this has no practical significance. The descent of exchangeable Al only due to changes in pH.