

SINGLE-IMPACT FICHE

SOIL AMENDMENT WITH LIME OR GYPSUM

IMPACT: SOIL NUTRIENTS

Data extracted in April 2021

Note to the reader: This fiche summarises the impact of soil amendment with lime or gypsum on SOIL NUTRIENTS. It is based on 1 peer-reviewed synthesis research paper¹ including 59 individual studies.

1. WEIGHT OF THE EVIDENCE

- CONSISTENCY OF THE IMPACT:

Soil amendment with gypsum, compared to no amendment, showed no effect on soil nutrients in the only synthesis paper reviewed. No results were reported for liming (see **Table 1**).

The reviewed synthesis paper does not include data collected in Europe (it was focused on China).

Table 1. Summary of effects. The numbers between parenthesis indicate the number of synthesis papers with a quality score of at least 50%. Details on quality criteria can be found in the next section.

Impact	Intervention	Control	Positive	Negative	No effect	Uncertain
Increase soil nutrients	Gypsum	No gypsum	0	0	1 (1)	0

- QUALITY OF THE SYNTHESIS PAPERS: *The quality score summarises 16 criteria assessing the quality of three main aspects of the synthesis papers: 1) the literature search strategy and studies selection; 2) the statistical analysis; 3) the potential bias. Details on quality criteria can be found in the methodology section of this WIKI.*

2. IMPACTS

The main characteristics and results of the synthesis paper are summarized in **Table 2**. Summaries of the meta-analyses provide fuller information about the results reported in each synthesis paper, in particular about the modulation of effects by factors related to soil, climate and management practices.

Table 2. Main characteristics of the synthesis paper reporting impacts of soil amendment with lime or gypsum on soil nutrients.

Reference	Population	Geographical scale	Num. papers	Intervention	Comparator	Metric	Conclusion	Quality score
Wang Y, Wang Z, Liang F, Jing X, Feng W 2021	Saline-sodic soil types	China	59	Soil amendment using flue gas desulfurization gypsum (FGDG)	No amendment control under identical experimental conditions	Soil total nitrogen, total phosphorous	Soil amendment with flue gas desulfurization gypsum has no significant effect on soil total nitrogen and total phosphorous.	62%

¹ Research synthesis papers include a formal meta-analysis or systematic reviews with some quantitative results. Details can be found in the methodology section of the WIKI.

3. KNOWLEDGE GAPS

The authors did not report knowledge gaps in the reviewed synthesis papers.