

heavy metals: no danger

agricultural lime versus potassic liming agent

summary of a study whose objective was to evaluate the content of certain heavy metals in KaLime® (cement kiln dust) and in agricultural lime¹

The potassic liming agent KaLime® has proven itself to be a very interesting alternative for producers who want to enrich and to increase the fertility of their soil. Its potassium sulfate enrichment generates economical and ecological benefits. Ecological because it is recycled CKD transformed into a rich and safe product that offers the flexibility of liming and fertilizing in one simple operation.

Despite its ground-tested efficacy and the excellent performance it generates in crop yields, some doubts still linger when spreading a CKD-based potassic liming agent compared to agricultural lime about its content in heavy metals. It is time to clarify these doubts once and for all.

► Heavy metals and potassic liming agent: no danger

At the request of Agro-100 Ltd, a first comparative evaluation has been led by Angus F. MacKenzie and Xinghua Xie of McGill University's Department of renewable resources. The results of this first evaluation reveal that concentrations in zinc (Zn), lead (Pb), cadmium (Cd), nickel (Ni), copper (Cu), manganese (Mn) and mercury (Hg) were similar between agricultural lime and the potassic liming agent KaLime®. In all cases, the content in heavy metals was well below the maximum admissible concentrations (OMAF, 1986). (See table 1)

In conclusion, we observe that contamination by heavy metals, with agricultural lime as well as with a CKD-based potassic liming agent like KaLime®, presents a fairly low risk. Besides, at 10 tm/ha every five years, we could spread agricultural lime for at least 220 years before its most toxic element, cadmium, reaches its maximum admissible concentration level. For a CKD-based potassic liming agent such as KaLime®, we could spread for 370 years!

These analysis and sample trials prove that a CKD-based potassic liming agent such as KaLime® is the same as agricultural lime in regards to its effects on the environment.

For more information or to order, please contact your Agro-100 representative.

Table 1. The content in zinc, lead, cadmium, nickel, copper, manganese and mercury of agricultural lime and of a CKD-based potassic liming agent (KaLime®) and admissible concentrations of residual fertilizing material (RFM) (OMAF, 1986)

| | concentration | | | | RFM |
|-----------|---------------|--------------------|---------|--------------------|-----------------------|
| | lime | | KaLime® | | |
| | mean | standard deviation | mean | standard deviation | admissible maximum |
| | mg/kg | | | | mg/kg of solid matter |
| Zn | 5.02 | 0.071 | 5.95 | 0.017 | 4200 |
| Pb | 22.40 | 0.047 | 73.30 | 0.264 | 1100 |
| Cd | 3.95 | 0.027 | 2.42 | 0.024 | 34 |
| Ni | 17.10 | 0.136 | 16.10 | 0.126 | 420 |
| Cu | 4.19 | 0.023 | 6.06 | 0.027 | 1700 |
| Mn | 423.00 | 2.240 | 238.00 | 5.800 | — |
| Hg | <0.011 | — | <0.012 | — | 11 |

¹ MACKENZIE, ANGUS F., XIE, XINGHUA. July 1993. Évaluation de la teneur en certains métaux lourds du Tubrex® (poussière de four) et de la chaux agricole et de l'effet du Tubrex® et de la chaux sur la germination du cresson de fontaine (*Nasturtium officinale*). Department of renewable resources, McGill University.



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