

EIP-AGRI practice abstract

Short title:

Technology for P recovery as calcium-phosphate starting from sewage sludge ashes with "Ash2Phos" process

Summary:

EasyMining recovers P from incinerated sewage sludge ashes. The Ash2Phos process can transform the sludge ash into raw material for phosphorus extraction and thereby be a part of a circular solution for phosphorus management. The process consists of 3 sequential steps: a first acidic step, a second alkaline step (where intermediate products are produced), and finally a conversion step where the intermediates are processed into final products. The process consists of several successive chemical reactions undertaken at room temperature (however one process step may benefit from a temperature of 40°C). There is no need for pressurized vessels or for exceptional materials to be used for the equipment. The mass balance of the process is favorable, since all input chemicals become part of the products.

More than 90% of P in the ash is recovered. The technology can use waste acid from incineration plants, with low labor intensity.

The main output product is calcium phosphate, this can be converted to superphosphate, di-calcium phosphate (41% P₂O₅) and mono-ammonium phosphate (61% P₂O₅, 12% N), all with cadmium content below 1 mg/kg P₂O₅.

For more information: https://nutriman.net/farmer-platform/technology/id_317