STRUVITE

Struvite from wastewater by "PHORWater" process.

Keywords: Struvite • phosphates • raw material • nutrients recovery • fertilizers

Key facts:

- → **Product Category**: PFC 1C
- → **Input material:** Wastewater sewage
- → **General appearance:** Crystalline salt. Particle size between 540-806 microns
- → **Nutrient Content (N-P-K %):** 5 N%, 29 P2O5%, <1,0 K2O%
- → **Product status:** advanced development stages.
- → **Permit availability**: not commercial yet.
- → **Geographical area:** Spain
- → **Price range:** 200-260 €/ha

Summary: Max 1400 character

Struvite is a potentially marketable product for the P fertilizer industry. Its genuine slow release property can be more efficiently used by crops, because it meets nutritional demands of crops in a better way and prevents the burning of plant roots, even when applied in excess quantities, guarantees a slow but steady nutrient supply. Moreover, struvite is an effective water-soluble phosphorus fertilizer in neutral and slightly acidic soils.
The amount of phosphorus and magnesium that the struvite could provide is higher than typical fertilizers (12% P and 9% Mg). However, the amount of nitrogen is lower than typical fertilizers (around 5 %N) and the percentage of potassium is very low so it is recommended to apply combined with conventional fertilizers to satisfy N and K demand. It can be easily combined with other solid fertilizers or dissolved in a slightly acidic solution.
Cd has not been detected and the amount of organic matter is very low, TOC is lower than 0.8%, thus it is a secure environmental friendly product.

How to use:

- → **Type of farming**: organic, low input, conventional. ALL
- → **Cultivation methods:** open field, greenhouse
- → **Recommended crops**: cereals for the production of grain, wheat and spelt, rye and winter cereal, barley, oats and spring cereal, grain maize and corn-cob, root crops and plants harvested green from arable land by area, dry pulses and protein crops, permanent grassland.
- → **Application dose**st/ha
  For the agricultural assays the application doses was 1.170 kg of struvite per hectare for potatoes and 921 for wheat.

Contact

Name: Laura Pastor
Company: DAM
Web: www.dam-aguas.es
e-mail: **laura.pastor@dam-aguas.es**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818470

STRUVITE

Struvite from wastewater by "PHORWater" process.

Depuración de Aguas del Mediterráneo

Key product features:

→ Crystalline salt / granule. Easy to handle
→ Very low organic matter.
→ Very low heavy metals.

Key product benefits:

→ **No overdosing risk**, avoids burning roots.
→ **High bioavailability**. Nutrients in struvite can be readily absorbed by the plant. Organic acids commonly exuded by plant roots increase P-struvite uptake.
→ Provides **steady nutrient supply**.

Competitive position and advantages:

Why this product is best for solving nutrient recovery problems?

Increases P recovery from WWTPs compared to other WWTP recovery processes.

Obtained product with steady composition. Most of the commercial phosphates have variable composition and do not constitute a defined chemical entity instead, they are mixtures of monocalcium phosphate, bicalcium phosphate, phosphoric acid, calcium carbonate and impurities.

No detected Cd. Almost any presence of heavy metals in comparison with phosphate rock derivates.

Slow release – slow leakage.

Easy to handle in powder form. Easy transport, storage and handling.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818470