

High nutrient dense Bio-Phosphate products recovered from food grade animal bone grist with over 30% P₂O₅ content, processed by “3R zero emission pyrolysis” process



recovered P fertiliser • biophosphate • biofertiliser • total product safety • high nutrient density

Key facts:

- **Product Category:** PFC 1 Solid organic fertilizer, PFC 2 Liming material, PFC 3 Organic soil improver, PFC 4 Growing media, PFC 6 Plant bio-stimulant, PFC 7 Fertilising products blend.
- **Input material:** food grade cattle and other types of bone grist.
- **General appearance:** 1-5 mm grain size granulated or powdered 0-1 mm fractions.
- **Nutrient Content (N-P-K %):** basic **>30% P₂O₅** **>38% CaO**. Any BIO-NPK-C compound formulations as of user demand.
- **Product status:** prior to market introduction.
- **Limitation of application:** no technical limitations.
- **Permit availability:** MS Authority permit number: 6300/2407-1/2020 as of EU for horticultural applications & lawful marketing in the EU27. REACH certificated, registration number: **01-2119490075-38-0042**. Meets the new EC 1009/2019 Fertilising Products Regulation (2022) and EC Mutual Recognition Regulation 2019/515.
- **Geographical area:** EU27, UK, USA, Australia and Japan.
- **Price range:** BIO-NPK-C formulated from 500 €/t.



Summary:

The Animal Bone Char (ABC) Bio-Phosphate is a natural bio-product with macroporous structure and economically high concentrated recovered Phosphorus content. The Bio-Phosphate commercial products are formulated to BIO-NPK-C in any compounds as of user/market demands for both organic and low input farming application cases. The BioPhosphate contains high amount of Phosphorus (>30% P₂O₅) and Calcium (>37%) that are processed to be available for plants, which allows efficient, environmentally safe and renewable phosphorus supply. Beside the highly available recovered phosphorus/calcium content the BioPhosphate also contains other important recovered trace elements, and other nutrients, such as potassium and magnesium.

The product is a **fully safe and economical innovative fertilizer with primarily application in the horticultural organic/low input farming cultivations** with combined beneficial and multiple effects. The market competitive BioPhosphate product is proven field demonstrated with validated agronomical effects. Several open field and green house cultivation tests have been performed in IT, IL, HU, DE, NL, SI and DK under different temperate climatic and soil conditions. Both the 3R (Recycle--Reuse- Reduce) zero emission pyrolysis/nutrient recovery process and the **Animal Bone Char Bio-Phosphate products are EU Authority permitted.**

How to use:

- **Type of farming:** organic, low input, conventional.
- **Cultivation methods:** open field, greenhouse
- **Recommended crops:** Fresh vegetables and strawberries, permanent crops (fruit trees), grapes, rice, tobacco.
- **Application doses:** 0.2-1.5 t/ha.

Contact

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Key product features:

- **HIGH NUTRIENT DENSITY:** 30%-36% P₂O₅ + 38%-42 % CaO, Mg, K + BIO-NPK-C formulations as of User need
- Macro porous structure.
- 92% bio-origin apatite based BioPhosphate mineral content (+ 8% C) that is classified by the EU as critically important raw material (COM/2017/0490).
- **PURE: no any toxic element content. No organic contaminants: PAH₁₉ <1 mg/kg.**
- **Controlled released** organic fertiliser and specific adsorbent

Key product benefits:

TOTAL PRODUCT SAFETY + FULL LEGAL COMPLIANCE+ ECONOMICAL APPLICATIONS:

- Produced from unexploited and renewable by-product streams from EU sources.
- Providing **SECURE OF PHOSPHORUS SUPPLY** and a reduction in reliance on cadmium/uranium contaminated and chemosynthetic mineral phosphate imports.
- Economically concentrated fertiliser with above 30% P₂O₅.
- Flexible application scenarios for the Users. No water pollution risk.
- **Fully organic certified.**
- The product is fully **safe to use** under any climatic and soil conditions.
- **Improved food quantity, quality and safety for less cost.** Yield increased by at least 10% and decreased production cost by at least 15-20%.
- **EPR: Extended Producer Responsibility certified.**

Competitive position and advantages:

The Animal Bone Char (ABC) Bio-Phosphate is the only known technology, products system and original solution in the EU in the field of **recovery of critical raw material Phosphorus from food grade animal bone grist**. While the mined mineral phosphate is a finite and non renewable resource with varying Cadmium/Uranium content, **BioPhosphate comes from a sustainable and renewable bio-based by-product stream, which is unexploited biomass**. The Bio-Phosphate is a bio-origin apatite product of a unique structure with large macropores and with a high content of pure Phosphorus (P). The nutrient content of the product is fully comparable to the traditionally chemosynthetically processed apatite mineral phosphate fertilizer but the ABC Bio-Phosphate is controlled release P fertilizer versus the rapid release mineral fertilizer. The Bio-Phosphate product is safe to use in contrary to synthetic fertiliser which contains complex levels of potential toxic element contamination. Unlike processed P-fertilisers, which is highly soluble and poses a pollution risk to inland waterways, it is possible to control the release of nutrients from ABC Bio-Phosphate fertiliser so that a far greater proportion is taken up by the plants. **The recovered, contamination free, safe and concentrated Bio-Phosphate is a unique and strategic product for the organic and low input farming** in the targeted high end markets. The BIO-NPK-C formulated ABC Bio-Phosphate can be used as bulk in growing media and amendment in nursery substrates as well. The combination of formulated BioPhosphate with compost, manure or another organic fertilizer is most encouraging for agronomic performance. The Bio-Phosphate and its formulated products are EU Authority permitted based on long term (4 years) accredited efficiency tests by different independent and accredited departments from the MS national Soil and Plant Protection Authority under EU legislation. **The ABC Bio-Phosphate fully meets the 1009/2019 Fertilising Products Regulation EU law harmonization beyond 2022.** REACH certificated, registration number: **01-2119490075-38-0042**

