

Saint-Gobain Formula provides a tailor-made solution for Yara

Saint-Gobain Formula worked in partnership with Yara to develop a bespoke calcium sulphate anhydrite from a new quarry to fit the specific needs of Yara and its customers.

Yara is a leading producer and marketer of mineral fertilizers. Their portfolio ranges from single-nutrient fertilizers to complex compounds and micronutrients for all kind of crops.

Saint-Gobain Formula is the market leader in the manufacture of calcium sulphate solutions for a wide variety of markets, including food, agriculture and environment.

Calcium sulphate is used in agriculture as a soil conditioner and as a raw material for the manufacture of fertilisers. It helps improve the chemical and physical properties of the soil, giving improved structure. Its chemical composition, calcium and in particular sulphur, makes it an excellent additive for the manufacture of fertilising products, providing essential nutrients to plants.

Soil Fertilisation – Overview

- **Goal:** to improve soil composition. The type of fertiliser to be used on an agricultural field will depend on the crop's needs, the content of the soil, the presence of residues from the last crop, the leaching effect, etc.
- **Three main minerals** used in fertilizers: Nitrogen (N), Phosphorus (P) and Potassium (K). After those elements, three others are still essential: Calcium (Ca), Magnesium (Mg) and Sulphur (S). Each of those elements has a different role for the plant.
- **Calcium sulphate** is commonly included in the formulation of fertilizers. It is incorporated to promote good physical properties to the fertilizer and will help in the industrial process of granule and compacted fertilizer production.
- **More sulphur required:** It is also important to take into consideration the move of power plants to desulphurisation, from coal burning to natural gas, there is a large decrease in sulphur emissions into the atmosphere and therefore less sulphur in agricultural fields, for which farmers may need to apply sulphur fertilisers.

General information:

- Project date: On-going
- Location: Soneja (Spain)
- Project partners – YARA

Product information:

- Market: Food, Agriculture and Environment
- Application: Agriculture
- Usage: Fertilisers

The challenge

Yara had very specific requirements related to the composition of the Calcium Sulphate required as it is used in the production of complex fertilisers. These type of fertilisers are made of Nitrogen (N), Phosphorus (P) and Potassium (K), elements that must be present in the appropriate quantities. Very stringent regulation must be carefully followed, in particular related to the use of Nitrogen.

To comply with Yara's requirements, Formula had to select a suitable deposit of natural Anhydrite. Consideration had to be given to the composition of the anhydrite, in particular with regards to the content of sulphur, avoiding any contamination with other elements such as copper, chloride or total organic carbon.

The approach

- ***Close collaboration:*** Formula and Yara worked in close collaboration to make sure the best possible solution was achieved.
- ***Technical support:*** Formula provided technical and commercial monitoring throughout the project. Laboratory tests, in both internal and certified laboratories, and industrial trials were conducted to optimise specification and to ensure continuous product improvement.
- ***Regular communication:*** In order to monitor and communicate on the progress of the developments, Yara and Formula maintain a very close contact. A number of meetings and visits to the manufacturing sites of both companies took place.
- ***Logistics review:*** Formula was also able to offer a more effective logistic solution.

Yara commented: 'We are very pleased with the partnership developed with Saint-Gobain Formula during this project. Yara has now secured a reliable source of anhydrite, which makes our sourcing capability future-proof and consolidates our position as market leaders in this very challenging market'

