

Two farmers from Moselle launch the first biostimulant based on volcanic rock

Improving nitrogen efficiency and the technical and economic profitability of farms is the ambition of Jean and Pierre Niesner with the launch of FertiRoc. This biostimulant has the particularity of being designed from zeolite, a volcanic rock capable of fixing certain chemical elements in its pores.



Le principe actif du FertiRoc utilise la synergie entre la zéolithe et des éléments nutritifs essentiels aux plantes. (©Leo Ginalhac)

Power the Nature, the company created by two farmers from Moselle, Jean Niesner and his son Pierre, has just completed the development of its 100% natural biostimulant: FertiRoc. "In our shallow silts, the average yield of soft wheat is around 60 q/ha and we were looking to improve the technical and economic profitability of the farm, by reducing costs and/or maximizing production", explains Pierre Niesner.

With these two objectives in mind, father and son became interested in zeolite in 2016: "a volcanic rock with a nanoporous skeleton in the shape of a honeycomb, which allows it to fix certain chemical elements in its cages". They then decided to associate it with nutrients that are essential for plants, but difficult to assimilate; namely calcium, magnesium and potassium".

Reduce nitrogen fertilization by 25% without reducing yield

The first two years of trials carried out on the farm showed good results, with a yield gain of +5 to 10 q/ha. They also served to test the composition and formulation of the biostimulant. "The minerals are worked, mixed and micronized extremely finely: 90% of the finished product passes through a 3 µm sieve in order to maximize the properties of the zeolite. The minerals are more easily assimilated." Jean and Pierre Niesner then sought to have the product recognized by peers. And the four years of tests on large crops and vines that followed, within various agricultural institutes such as the Swiss Agricultural Research, the Aisne Chamber of Agriculture, the French Vine Institute and Rittmo (Research & Development Center for Fertilizers and the Quality of Agrosystems), made it possible to "validate the effectiveness of the biostimulant in improving the agronomic and economic performance of crops while reducing the environmental impact. » With FertiRoc, Power the Nature highlights "a possible 25% reduction in nitrogen fertilization without reducing yields or the quality of harvested products". After obtaining the patent in November 2023, Power the Nature also received the "CE biostimulant" certification for FertiRoc in May 2024, compliant with the claim "improves nitrogen efficiency".

A cost of €42/ha on cereals

Please note: "no change in the nitrogen concentration in the grains was observed following the application of FertiRoc, neither for wheat nor for corn. Thus, even when grain production increased, there was no dilution of the nitrogen concentration, an important result concerning the qualitative value (= protein content) of wheat and corn grains", details the Official Journal of Swiss Agricultural Research. In cereals, two applications of 1.5 kg/ha are recommended, representing a cost of €42/ha. On a technical level, the biostimulant in powder form is sprayed on the leaves. It does not require any specific equipment or changes in cultivation practices. It can be combined with fungicide treatment to avoid an additional application. After two years of trials in the Etamines experimental network, FertiRoc is referenced by Actura, a network of independent agricultural traders and cooperatives. It will therefore be available to network members from spring 2025. The start-up has also had discussions with several agricultural players such as Heineken, LG and Betaseed, interested in the objective of decarbonizing the sectors.