

MINERAL PLANT MAKES USEFUL PRODUCTS OUT OF MANURE

Oscar Schoumans of Wageningen Environmental Research is working on a method of extracting phosphate from manure. He is thereby contributing to the work of the Green Minerals Plant in Beltrum, which was opened by Queen Máxima on 4 September.

The new plant in the Achterhoek region in the eastern Netherlands is part of Groot Zevert Vergisting, a company that processes pig manure into biogas, phosphate fertilizer, nitrogen-potassium concentrate, low-phosphate organic matter and clean water. Groot Zevert has been producing biogas for years. The residue of that production – digestate – used to be sold as fertilizer in the Netherlands

The organic matter from the plant can be used to improve the soil and possibly as potting compost

and Germany. The new mineral plant spells the end of that export. WUR started laboratory tests on extracting phosphate from manure in 2013. First, pig manure is separated into a solid fraction (mainly phosphate and organic matter) and a liquid fraction (containing mainly nitrogen and potassium).

Then the solid fraction is treated chemically, with the phosphate being dissolved and then fixed using a calcium hydroxide or magnesium hydroxide solution. Not a complicated method, says Schoumans, but further testing, assessing and gradually upscaling the technique for large-scale application will take a few years.

Separating phosphate and organic matter ensures that the Green Mineral Plant not only recovers phosphate as a raw material for the artificial fertilizer industry, but also produces organic matter. Farmers can use that to improve the structure of the soil, and it might also be suitable as potting compost, reducing imports of peat from the Baltic states, says Schoumans.

The factory also extracts the water from the liquid fraction of the manure using membrane filtration. The clean water is discharged into local surface water, while the manure concentrate can be sold as 'green meadow compost'.

Opponents of this manure processing claimed around the time of the opening that the Green Mineral Plant had wrongly been given an environmental permit, and that it was dumping polluted water. Schoumans: 'WUR will be analysing the quality of all the end products in the years to come. People are welcome to come and have a look. It is important that we work on solutions.' **AS**



PHOTO: GROOT ZEVERT VERGISTING

▲ The company Groot Zevert Vergisting opened the Green Minerals Plant on 4 September.