FASTCOMPANY.COM
Where ideas and people meet
Article location:http://www.fastcompany.com/1653332/ostara-makes-fertilizer-from-wastewater-in-virginia-with-help-from-rfk-jr
May 27, 2010
Tags: Innovation, Technology, Ethonomics, ostara

# Ostara Aims to Stave Off Peak Phosphorous

By Ariel Schwartz

Forget peak oil. The next big crisis is peak phosphorous [1]--a shortage of mined phosphorous for fertilizer. The problem is so bad that supply won't be able to meet agricultural demand within the next 30 to 40 years. But a Robert F. Kennedy Jr.-backed startup called Ostara thinks it might have the solution: a system that removes nutrients--including phosphorous--from wastewater and turns it into a slow-release commercial fertilizer called Crystal Green. The company's second commercial facility was unveiled this week at the Nansemond Treatment Plant in Suffolk, Virginia.

Ostara's process features a reactor that processes sludge liquid and recovers nutrients that might otherwise have to be disposed of using costly processes. The reactor is so effective that it can extract over 90% of phosphorous from a municipal waste stream. "Our process works very much in complement to existing wastewater treatment technology. There are plants that have advanced processes to remove nutrients from raw sewage, but they need to dispose of them. We can take those concentrated nutrient flows and extract out nutrients," explains Phillip Abrary, the CEO of Ostara, in an interview with FastCompany.com. "The system pays back for itself in five years."

Once nutrients have been extracted, Ostara mixes them with magnesium chloride and caustic to create pellets that can be processed into Crystal Green, the company's slow-release commercial fertilizer. What's unique is that the fertilizer dissolves over a long time," Abrary says. "When you put it in soil, it takes 8 to 9

months to dissolve. Plants are constantly fed using these nutrients."

Municipalities pay for Ostara's technology in one of two ways: a capital-based model that requires municipalities to pay Ostara for construction, with an investment paid back through revenue from Crystal Green sales, reduced operating costs, and increased plant capacity; and a fee-based model where Ostara pays for construction and operating costs while the municipality reimburses Ostara and pays a profit margin from a negotiated fee over a set number of years.

So far, municipalities have embraced the idea. Ostara opened its first commercial plant--a $5 million facility--outside Portland, Oregon last year. It is producing 500,000 pounds of Crystal Green annually. Ostara's second commercial plant, launched this week in Virginia, and the company plans on opening another plant in York, Pennsylvania in September.

At a time when we're scarily short on phosphorous, it would be foolish not to recycle the resource while we still can. "We're recovering phosphorous that would otherwise have to be mined," Abrary says. "It's a strategic resource initiative."

[Ostara [2]]

*Ariel Schwartz can be reached on Twitter [3] or by email [4].*

---

**Links:**
[1] http://ideas.blogs.nytimes.com/2010/04/27/peak-phosphorus/
[2] http://www.ostara.com/
[3] http://twitter.com/arielhs
[4] mailto:ariel@fastcompany.com