



Xampla's seed coating aims to tackle the issue of microplastics in agriculture | Photo source Xampla

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A FILM ELIMINATES THE NEED FOR PLASTIC SEED COATINGS

 SUSTAINABILITY

A new, biodegradable, and completely natural seed coating could replace the need for plastic coatings and reduce microplastics in agriculture

Spotted: There is a growing realisation that microplastics—small particles of plastic with a diameter of less than 5 millimetres—represent a serious environmental threat. The tiny plastics have been found almost everywhere on earth and inside almost every type of organism studied – including newborn humans. Particles smaller than around 100 nanometres can pass the blood-brain barrier, and enter individual cells. While some researchers study just how dangerous these particles are, others are focused on finding alternatives to the plastics that generate them.

University of Cambridge spin-out Xampla has recently announced a partnership with multinational Croda to develop a natural replacement for microplastic seed coatings. Seed coatings are used to protect seeds from pests and diseases and increase the incidence of germination. However, while they help reduce the use of pesticides, the coatings are normally made using petroleum-derived polymers, which are not fully degradable in agricultural soils. The plastic-free coating being developed by Xampla will be completely natural.

The new coating will also leave no residue in the environment, and will disappear without a trace once it has done its job of protecting the seed. Croda is hoping the collaboration will help the company move closer to its aim of being 'Land Positive' by using crop science to mitigate the impact of climate change on land use and degradation. The initial trial is expected to take one year to complete.

Erik-Jan Bartels, Managing Director of the Incotec Seed Enhancement business at Croda International plc discussed this goal in relation to the project, saying, "Seed coatings are a high-

growth part of our business and we are determined that growth should come from sustainable, plant-based alternatives. Microplastics in agriculture in total account for 10% of the world's microplastics problem, and within that seed coatings account for 1% but that makes it no less important to change the industry, as we have been doing now for some time.”

While it is nearly impossible to remove existing microplastics from the environment, a growing number of researchers and innovators are working on ways to reduce their generation in the first place. At Springwise, we have recently covered some exiting developments in this space, including a researchers working on using marine mussels to filter [ocean microplastics](#) and a tyre-mounted [microplastic collection](#) device.

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Takeaway:

Beyond the seed coating industry, Xampla is hoping their natural polymer technology can be used in a wide variety of industrial applications, including “to replace non-recyclable thin plastic films, as a substitute for microcapsules containing scent in fabric softeners, shower gels and soaps, to encapsulate nutrients such as Vitamin D in beverages, and to replace the polluting ‘soluble’ wrappings used on dishwasher tablets.” This is important because, while it may be unclear just how dangerous microplastics are, it is clear that the problem is growing rapidly – even if all plastic production were somehow stopped today, there would still be around 5 billion tonnes of plastic sitting around. These would continue degrading into microscopic pieces that are impossible to collect or clean up, creating what has been called a 'plastic time bomb'.