

Development of a new material 100% compostable for micro-irrigation systems

Four companies are working together in the European Project DRIUS; the Spanish company Extruline Systems, the Israeli Metzerplas, the Spanish research organization AIMPLAS (Technological Institute of Plastics) and OWS N.V. (Belgium), as coordinator.

The main objective of this project is to implement in the market new micro-irrigation systems 100% compostable as a solution to manage the plastic and the green waste in a composting plant at the end of the crop period. The new system will not require the separation or the burning of the pipes and green waste.

The main applications of the system to be developed in DRIUS will be crops of small plants such as strawberries and tomatoes with short periods of cultivations, less than a year. Currently, the problem after the crop period is the difficulty in the recycling of the irrigation system because of the mix of plastic with plants and soil, so the common solution is the burning of the waste generated. However, the new compostable system will make possible to treat the waste in a composting plant.

DRIUS is the continuation of a previous project called HYDRUS (FP7/2007-2013-Grant Agreement 231975), where new biodegradable micro-irrigation pipes were developed and satisfactorily manufactured in industrial extrusion lines. The main focus of the present project is to manufacture biodegradable drippers by injection to obtain the complete system.

The material and the geometry of drippers are important to have the water flow required in the different crops. The material adjusted for the drippers needs to be processable by injection, chemically compatible and weldable with the pipes and will maintain its shape and functionality during the use of the micro-irrigation systems in the field.

The specific role of AIMPLAS in the project will be to optimize the suitable material for drippers to make possible the industrialization of the micro-irrigation system. Extruline Systems will be responsible for manufacturing the complete micro-irrigation system (pipes and drips) at industrial level. Metzerplas is going to design the new moulds and will be the injector for flat drippers. Lastly, Organic Waste Systems will carry out the complete study of biodegradation and compostability in order to obtain the compostability logo.

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