

## **Multibiosol: innovative fully biodegradable mulching films and fruit protection bags for sustainable agricultural practices**

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### **Abstract**

For over half a century growers/farmers have been using plastic materials in agriculture, also known as agro-films. Current existing semi-intensive and intensive farming practices require the use of large quantities of mulching film and fruit protection bags (and clips to close them) since they help prevent the growth of weeds, protect crops from insects, regulate soil and produce temperature and retain water and nutrients. Conventional agro-films are non-degradable polymers, and after a single-use they become plastic waste, creating a serious problem of waste management since it is time-consuming and expensive to recycle. This plastic waste is usually abandoned, incinerated or taken to a landfill. These practices have serious consequences for the environment. Therefore, governments and farmers demand cost-efficient, environmentally responsible solutions. During the execution of this project (3.5 years), the consortium has addressed three specific objectives: development of new biodegradable plastic films with very low carbon footprints; reducing its impact through use of biodegradable polymers and additives that are made from renewable raw materials (non petroleum-based) and do not compete in food markets; elimination of waste management, due to the biodegradability (with OK biodegradable soil certification) removal and transportation of the waste is no longer needed. Conventional agricultural films have toxic components and contaminate the soil in a number of ways. Multibiosol bioplastics will not only avoid these harmful components, they also will add value through oligo elements and micro-perforation functionalities that contribute to agriculture *à la carte* and help improve soil health and food quality. The results consist of the actual manufacturing of the products (biomulching, biobags and bioclips), laboratory tests and pre- and post-harvest tests in selected agricultural fields. Experimental validation tests were executed during three crop-growth cycles demonstrating effectiveness and functionalities.

### **Biography**

Priya Devasirvatham has completed a Masters of Science in Industrial Ecology from the Autonomous University of Barcelona (Spain) and a Bachelors of Business Administration from the College of William & Mary (USA). She is working as a European Project Manager at Transfer Consultancy, coordinating 4 international consortiums of EU-funded projects (LIFE Programme and Horizon 2020). She is also in charge of the drafting, critical co-writing and team management of project proposals in the line of environment, sustainable agriculture, food production, energy and ecosystem restoration. During her years as a project manager, she has collaborated with multi-disciplinary consortiums (research centres, SMEs, universities and civil society organizations) from Spain and the rest of Europe.

**Pending Publications:** Life Cycle Assessment of a Spanish Vineyard

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