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EU Funded GREENAVOID Project Aims to Develop PE Film Resistant to UV & Sulfur Degradation

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In Europe cultivation in plastic greenhouses has permitted the conversion of apparently unproductive farmland into modern agriculture holdings. Different types of plastics, such as polyvinyl chloride (PVC), polycarbonate (PC) and low density polyethylene (LDPE), are commonly used for covering greenhouse structures. However, most of the plastic polymer films are prone to photo degradation when exposed to UV radiation (290-400 nm) or even visible radiation (400-700 nm). In warm regions, the combination of UV radiation with agro-chemical agents used in the greenhouses aggravates the problem of plastic cover degradation substantially. Durability is one of the aspects that most interest and concern end users. Therefore, the manufacture of plastics resistant to treatments performed in greenhouses is one of the current battlefields, where products such as Sulfur and, chlorine which are used to control pests, have become the greatest enemies of the farmer. Sulfur is especially aggressive and the current method of application has a great impact on the degradation of films used as cover in the aforementioned greenhouses.

The European Union is investing in the development of innovative products for the improvement in cultivation of this type of greenhouse, through the GREENAVOID project (Greenhouse Solution to Avoid Film Cover U.V. and Sulfur Degradation) No. 298644 of the Seventh Framework Program for the benefit of SMEs. The project consortium consists of two European SMEs (Colores y Compuestos Plásticos S.A. and Marion Technologies S.A.) and a SME from Israel (Soli Industries (1981) LTD). The project also involves three research institutes who are responsible for the development of the innovative technology to be used in the project. They are Tecnologías Avanzadas Inspiralia S.L (Spain), Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V. Germany) and Asociación Empresarial de Investigación Centro Tecnológico del Calzado y del Plástico de la Región de Murcia (Spain). Finally, two end-users are also involved to close the innovation cycle: Solplast S.A (Spain) and Aprofruit Italy Sco. Coop. Agricola (Italy).The expected duration of the project is 24 months and the total cost amounts to € 1.459.229 of which € 1,140,000 are financed by the EU.

The GREENAVOID project aims to develop an innovative integrated solution that combines a new formulated film of polyethylene resistant to UV degradation in the presence of burning Sulfur with an improved design of Sulfur vaporizer that minimizes the amount of product that reaches the inner greenhouse cover. This integrated solution aims to achieve an agricultural film with 3 years warranty in the presence of Sulfur and under light radiation of 145-150 KlAngleys/year (average radiation in southern Europe). In addition, this film aims to be resistant to concentrations of 3500ppm Sulfur and 250 ppm of chlorine in plastic, with a minimum of 85% PAR transmittance and UV blocking. The impact of the integrated solution GREENAVOID will be high in the EU considering, not only the total revenue generated by the SMEs, but also the savings in plastic for the end-user (the farmer) the savings in energy for polyethylene production and also the reduction of imports from China.

About GREENAVOID Project

GREENAVOID is a collaborative project aimed at developing a new combining solution to avoid degradation of greenhouse film by UV and agrochemical Sulfur. This integrated solution aims to achieve an agricultural film with 3 years warranty in the presence of Sulfur and under light radiation of 145-150 KlAngleys/year. The project is supported by the Seventh Framework Program for the benefit of SME's.

Source: *GREENAVOID project*