

News Title

Tests of new biodegradable and compostable materials for soil mulching and staking in the horticultural sector under plastic.

Brief summary of the news

The results of these tests will imply a closer approximation of intensive horticulture to the principles of circular economy.

News

The project REINWASTE ("Remanufacture the food supply chain by testing INNOvative solutions for zero inorganic WASTE") began in April 2018y and aims at managing the inorganic waste generated in agrifood systems, both from agriculture and the industry, observing the principles of circular economy at the highest possible level.

One of the clusters that make up this project is the agri-food sector of horticultural products in Andalusia (Spain). AGAPA and IFAPA, as project partners, are developing various types of pilot projects to test new biodegradable and compostable materials that can replace the traditional plastics used in intensive horticulture.

On Thursday, January 16, 2019, two of the five pilot projects carried out under the REINWASTE project, were visited: one of them in Motril (Granada) and the other one in La Mojonera (Almería). These tests will improve the agricultural practices utilized for soil mulching and the raffia used for staking in greenhouses.

Soil mulching, as it is well known, performs several functions, including maintaining soil moisture, boosting microbial life, reducing the spread of weeds and stabilizing the temperature of plants roots. The soil mulching traditionally used is made from LDPE (low density polyethylene) and has the disadvantage of being removed at the end of the production cycle. But most of the time, these materials are partially fragmented, thus incorporating pieces of plastic on the ground, which will take many years to decompose. On other occasions, at the end of the use of soil mulching, it could be recycled, but when it comes to very fine materials and, on many occasions also "contaminated" with traces of soil and plants, it is very difficult to manage them. Therefore, the project REINWASTE is testing the use of two types of soil mulching so as to compare them with the LDPE (control): (I) "Biomulch", which is biodegradable in soil and (ii) Ecovio®, which is compostable. In this way, the resistance of such materials to fulfil their role until the end of the production cycle is evaluated, as well as their degradation capacity in a totally natural way (see picture 2).

The other pilot project under development (picture 3), evaluates, in the same way, the resistance and



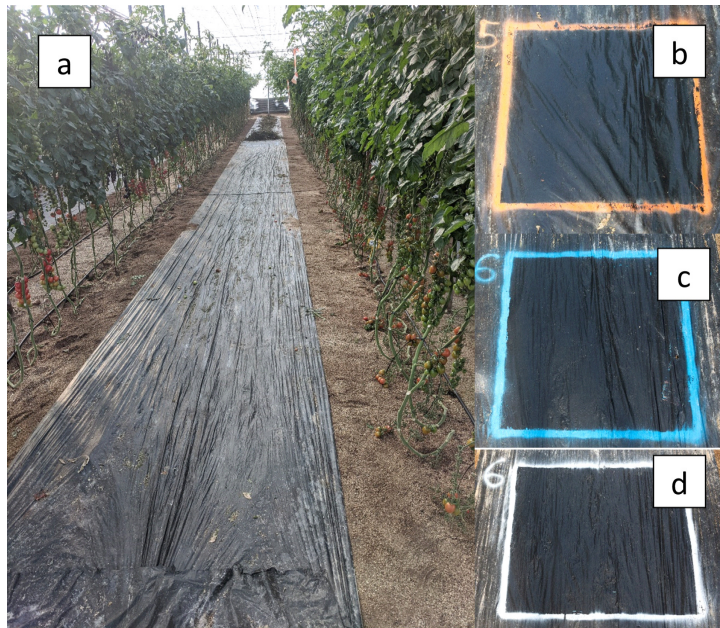
the biodegradation capacity of different staking strings, commonly called raffia. These staking elements meet the following functions: Increasing air circulation between the foliage, lifting the plant thus preventing the flowers and fruits to be in contact with moist soil, preventing the fruits staining when growing, (iv) preventing the damage produced by trampling during the development of tasks and increasing the crop quality and production. The problem generated by the use of raffia, is that, after the end of the crop cycle, plants are removed and these plant remains are brought to the composting plant. If the raffia has not been previously thoroughly removed (with the workforce that it will imply), there will be remains in the plant material, which most often leads to its rejection in the composting plant. In this sense, this pilot project is evaluating two types of raffia alternatives so as to compare them with the raffia commonly used (polypropylene): (I) raffia 100% vegetable origin (made from jute) and (ii) mixed biodegradable raffia of vegetable origin with a percentage of synthetic polymer. The objectives of this pilot project are similar, at its basis, to the one mentioned above: (I) Assessing the resistance to the weight of plants until the end of the crop cycle and, subsequently, (ii) studying its biodegradation and compostability capacity (Picture 3).

The results of these tests will lead to a greater approximation of horticulture to the principles of circular economy, thus contributing to the achievement of a more sustainable agriculture from the social, economic and environmental points of view.

Picture attached: YES



Picture 1. Members of the team participating in REINWASTE pilot projects. IFAPA Camino de Purchil (Granada), IFAPA La Mojonera (Almería), COEXPHAL, ECOGESTIONA and AGAPA (Project Coordinator).



Picture 2. Pilot project on soil mulching in La Mojonera (Almería). (a) 'Biomulch' installed in one of the streets of the greenhouse. (b) Conventional polyethylene mulch. (c) Biomulch. (d) Ecovio[®] mulch.



Picture 3. Pilot project on staking strings (Motril, Granada). (a) Row of plants with staking strings. (b) Jute raffia. (c) Raffia in trial. (d) Traditional staking with polypropylene filament strings.

Noticia sólo para interior de Zaguán: No

Noticia pública (web pública y zona pública Zaguán): Sí

MARCAR PARA QUE SE CARGUE DE FORMA AUTOMÁTICA EN EL BANNER DE "Proyectos Internacionales"