Olives Kernels Can Be Used To Produce Sustainable Substitutes For Construction Materials

A team led by two professors, Mercedes del Rio and Francisco Fernandez from the Polytechnic University of Madrid (UPM), has demonstrated that olives kernels can be used to produce sustainable substitutes for construction materials such as aggregates.

This new application of the waste resulting from the production of olive oil reduces the density of construction materials and improves their thermal and acoustic properties, plus that their production energy demands are lower than in the cases of regular construction materials production.

Olive kernels can be used in a much more effective and sustainable manner

Spain is the first producer of olive oil in the world. Each year, this industry generates approximately 37,500 tons of waste in the form of olive kernels.

At present, this waste is used as biomass, but its calorific value is seven times lower than oil. Therefore, the search for a new, more cost-effective application of these wastes is a must.

This very idea has motivated the before-mentioned professors to put up a team to experiment how the olives kernels can be used in a much more effective and sustainable manner.

“If the effectiveness of their application as an aggregate of mortars were proven, it would start the mass production of construction materials which will be more sustainable from an environmental point of view,” explained Francisco Fernandez.

Researchers have produced light mortars with oxidized olive kernels

The researching team forced the creation of mortars with oxidized olive kernels because of their great porosity, uniform granulometry, low density, and their high degree of adhesion with the cement. Therefore, the oxidized olive kernels proved to function as light aggregates.

In the opinion of Mercedes del Rio, “the excellent qualities of these aggregates allow them to be used in buildings or civil constructions not only for realization of light mortars for coatings but also for the manufacture of lightweight insulating concrete that can be applied in the execution of screeds for the roofs, helping the thermal insulation”.

In conclusion, the researchers have proven that the residues of olive kernels can be used to produce sustainable substitutes for construction materials such as aggregates.

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