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Vegetation could recover in the ski resort of Sierra Nevada

The conditioning Works of Sierra Nevada's ski runs have destroyed a great amount of vegetable species. The researchers of the University of Granada (Spain) have already managed to grow in the laboratory two native bushy species in order to suggest new mechanisms for vegetable cover restoration.

They will try to use them to preserve the biodiversity in the National Park of Sierra Nevada.

The vegetable species of Sierra Nevada are the 30% of Spain's floral richness and they are impoverishing due to the maintenance with heavy plant of the ski runs. Soil erosion is increasing and the loss of biodiversity gets worse, as 80 of the more than 2,000 vascular plants present are endemic of this massif.

This new experiment, whose results will be published in the next issue of the Central European Journal of Biology, will permit "to recover the spoiled areas, improve the present restoration methodology of the vegetable cover and landscape integration, and favour the preservation of biodiversity in such a fragile area such as Sierra Nevada", explains to SINC Francisco Serrano Bernardo, main author of the study and Researcher in the field of Environmental Technologies of the University of Granada.

The scientists studied two native bushy species of Sierra Nevada, among other taxons: Genista versicolor Boiss (Leguminous) and Reseda complicata Bory (Resedacea), whose ecological niche is, above all, in the ski resort and its environment.

In order to manage the recovery in its natural environment, the researchers wanted to know "some environmental requirements such plants need to optimize their germination and growth processes". The main problem of bushes is that, in the short term, "they do not manage to regulate themselves to recover their biodiversity naturally".

Seeds growing in the laboratory

The study has been carried out from three different samples of several soils of the ski resort. The goal is to test if these species seeds are able to grow in different experimental conditions. Soils have not been contingent; they were selected according to the orientation, the slope, the height and the location of the runs in the resort, among other aspects.

Treatments with different vegetable growth regulators (auxins, gibberellins, cytokinins and ethylene) were applied to the seeds "to improve germinative and growth percentages in laboratory and make easier the later transfer and application of the results to the ski resort", the researcher says.

Seeds germinated and grew successfully in the laboratory. According to Serrano, the effectiveness of the regulators has been tested in aspects such as the formation of the radical system, stem elongation, cotyledon expansion (simple leaves which feed the plant) or leaves appearance.

Once the treatments are applied to the field, they are expected to "favour the recovery of the vegetable cover in a space of time considerably lower to that needed without any intervention", the experts say.-Universidad de Granada

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