

Nanoparticles for quick germination of cucumber seeds

Researchers at the Agrarian Autonomous University Antonio Narro (UAAAN) are evaluating the effects of zinc oxide (ZnO) nanoparticles (NP) on the germination process of cucumber seeds, so that it is quicker and generates less pollution.

In an interview with the Information Agency of the National Council of Science and Technology (Conacyt), researcher Norma Angélica Ruiz Torres explained that the project consists in evaluating the behaviour of young cucumber seedlings obtained from seeds treated with solutions of zinc oxide nanoparticles.

These are microscopic particles of said compound, which is one of the semiconductors of greater technological interest due to its numerous applications.

"In this research, what we are doing is assessing the impact of zinc oxide nanoparticles on cucumber seeds; we are looking at whether it gives a boost to seed germination and promotes vigour," she explained.

"To this end, we are evaluating two zinc oxide nanoparticles: the one is commercial and the other is of the engineered type," added project collaborator Alberto García González.

The engineer commented that eight days after the study, an evaluation was made to determine the percentage of normal seedlings, abnormal seedlings and seeds without germination, as well as the dry weight of seedlings.

He emphasised that the use of nanoparticles in agriculture is relatively new. There is little information in Mexico and some of it is only in other languages.

"We want to investigate more about the use of nanoparticles as promoters of germination and seedling development," he stated.

Potentially, this could be applied by companies in the agricultural sector, since it could increase the number of germinated seeds while speeding up the process, and possibly facilitating the growth of more vigorous plants," pointed out García González.

In terms of sustainability, this project would help to make fertiliser applications more efficient and reduce pollution, since it would reduce the application of granular fertilisers that contaminate the soil. Instead, growers would use nanoparticles targeted at specific parts of the plant.

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