To What Extent Do Silver Nanoparticles Affect the Growth of Hornwort Plants?

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Silver Nanoparticles are important tools in the nanoscience, nanotechnology, and nanomedicine fields. They are also used in many consumer products and food packaging. Studies are beginning to arise suggesting that Silver Nanoparticles may negatively affect the health of humans. The researcher tested the effect Silver Nanoparticles had on Hornwort plants to determine if they were harmful to the growth and overall health of the plants, hypothesizing a negative impact on growth. A Silver Nanoparticle solution was produced with heated Silver Nitrate, distilled water, and 2% Sodium Citrate solution. Then 3 vials were filled with a specified Silver Nitrate Solution for 3 different test groups of 1mL, 2mL, and 3mL before adding the Hornwort plants. A separate 3 vials were kept as a control unit and another 3 vials were kept as a water evaporation rate without any plants in them. The mass of each vial was periodically measured and recorded for 10 days under high light conditions. The same procedures were repeated for 4 days under low light conditions. The analyzed data showed that the plants without Silver Nanoparticles had greater growth than plants contaminated with Silver Nanoparticles. Visibly, the contaminated plants lost their green color and were left yellowish brown and most likely dead. The experiment accepted the hypothesis, the Silver Nanoparticles negatively affected the growth of Hornwort plants and potentially killed some of the plants.

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