The results evidenced that the germination percentage was not affected by PS particles of both size at any concentration. Seedlings root and shoot elongation was mainly affected by exposure at highest concentration of nPS after 7 days of imbibition while photosynthetic pigments increased in all treatments.

The fluorescence of nPS was observed in root hair, in root vascular bundles of 7 days seedlings and in the shoot of 14 days seedlings. TEM and ATR-FTIR analysis supported this finding, evidencing presence of nPS particles in analyzed tissues. On the contrary, smPS particles were rarely observed in the roots and in the tissues, as demonstrated by fluorescence microscopy as well as by TEM and ATR-FTIR.

These results raise concerns about nPS contamination of food via edible plants, this representing a serious risk for human health.