

## عنوان مقاله:

Nanotechnology and plant diseases management

## محل انتشار:

دهمین سمینار ملی شیمی و محیط زیست ایران (سال: 1400)

تعداد صفحات اصل مقاله: 3

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## خلاصه مقاله:

Every year, ۲۰%-۴۰% of harvests are lost because of plant diseases, resulting in billions of dollars of losses to crops agriculture. Although disease management options exist for many crops, all options possess significant shortcomings. This, taken with the building pressure for increased food production and the potential challenges caused by a warming climate, highlights the need for novel disease management approaches. Application of nanotechnology in plant diseases is still in its infancy. Nanotechnology has the potential to play a critical role in global food production, food security, and food safety. The applications of nanotechnology in agriculture include fertilizers to increase plant growth and yield, pesticides for pest and disease management, and sensors for monitoring soil quality and plant health. Over the past decade, a number of patents and products incorporating nanomaterials into agricultural practices (e.g., nanopesticides, nanofertilizers, and nanosensors) have been developed. the use of nanoscale nutrients (metals, metal oxides, carbon) to suppress crop disease and subsequently enhance growth and yield. Notably, this enhanced yield may not only be directly linked to the reduced presence of pathogenic organisms, but also to the potential nutritional value of the nanoparticles themselves, especially for the essential micronutrients necessary for host defense. but high toxicity of nanoparticles inadvertently released in the environment may pose greater threat to man and other organisms. Therefore, nanotechnological progress is to be viewed with caution and dealt accordingly. The collective goal of all of these approaches is to enhance the efficiency and sustainability of agricultural practices by requiring less .input and generating less waste than conventional products and approaches

## کلمات کلیدی:

plant diseases, nanotechnology, crops

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