



Abstract Clay Nanoparticles Facilitate Delivery of Antiviral RNA for Crop Protection ⁺

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Abstract: Recently, nanotechnology, biotechnology and agriculture are gradually integrated into innovative crop protection product. My talk will present a good example that combines these disciplines to develop clay nanoparticle-based gene pesticide for plant virus protection. I will first introduce a clay nanomaterial, and then present the details for its use as a vehicle for topical delivery of RNA pesticide to plants. Topical application of naked dsRNA onto plant leaves can protect the plants from virus invasion for only 5–7 days. Once loaded on clay nanoparticles, the dsRNA does not easily wash off, shows sustained release and stays on sprayed leaves for 30 days. Significantly, a single spray of dsRNA-clay nanoparticles offers virus protection for 20–30 days for both sprayed and newly grown leaves. I will also show the possible pathways for delivered dsRNA to function.

Keywords: nanotechnology; crop protection; anti-virus specific dsRNA; topical delivery; NANO-agro-biotechnology



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