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Invited speaker:

Searching for new 'biofungicides' based on oligonucleotides for the control of fungal diseases.

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Searching for new “biofungicides” based on oligonucleotides for the control of fungal diseases

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Botrytis cinerea and *Podosphaera xanthii*, the causal agents of the gray mold and the cucurbit powdery mildew diseases, respectively, are limiting factors of horticultural crops production worldwide. Their control is very dependent on the application of commercial fungicides; however, both have developed high levels of resistance to the most chemical classes, a fact that has been widely demonstrated in Spain. In addition to this problem, the recent European Green Deal will be reduced the diversity of fungicides available to growers by 50% in 2030. For this reason, alternative control tools and molecules with fungicide activity are needed. In our research group, the efficacy of the emerging RNA interference (RNAi) strategy, called "spray-induced gene silencing" (SIGS), and the use of aptamers have been checked as sustainable solutions to be used into the integrated management programs of both diseases. For this purpose, several double-stranded RNA (dsRNAs) and two aptamers, involved in the virulence/pathogenicity of both pathogens, have been designed. To improve their applications under field conditions, their nanoencapsulation have also be carried out. The progress made in our research works will be presented.

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