

Strategie di adattamento agli stress

First evidences in screening potential *Actinidia* genotypes to be used as rootstock for kiwifruit decline tolerance

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In Italy, Kiwifruit Decline (KD, generally called “Moria”) is a severe and complex pathology, derived from biotic and abiotic causes, that has been afflicting kiwifruit cultivation since almost 10 years ago. Lately, its damage is increasing and causing both dramatic yield and economic losses, as well as plant death and the inability to replant Kiwifruit in infected orchards. The disease can affect *A. deliciosa* and *A. chinensis*; old and young plants; under organic or conventional farming. Symptoms are found, firstly, on the root system with widespread necrosis and then on the aerial part. The aetiology of this disease is attributed to the presence of soil borne pathogens whose activity is enhanced by conditions of water excess (e.g., anoxia). In this context, since there are no effective tools against it, one of the most promising possibilities to contrast KD is the use of species of *Actinidia* that show resistance or tolerance. The root system plays an essential role in the overall plant development (anchoring, up taking, etc); moreover, being the interface between plant, soil, and its microbial community, it can also influence the behaviour towards pathogens.

Hence, in order to identify possible genotype candidates to be used as rootstock for their capability of resisting to KD, eight species belonging to *Actinidia* genus were planted and tested in four experimental sites in Friuli-Venezia Giulia region, where KD is present since 2014. Evaluation of the potential rootstocks after one year from planting was made by an investigation carried out on the root system, taking into account different agronomic parameters, as well as vegetative plant growth. Our preliminary results reported potential rootstocks capable of resisting and growing in KD inducing soils. In fact, genotypes under test had different and significant performances of the root system and agronomic features in all experimental sites yet confirming the evidence of those ones already known as sensitive. This suggested us that some of them may be useful against KD, in a direct way or for genetic improvement issues. Finally, it is reported that, in addition to the agronomic behaviour of the genotypes tested, we begun to evaluate their grafting potentiality with Hayward and Sorely varieties, and then the agronomic behaviour of grafted plants.

Keywords: *Actinidia*, Kiwifruit Decline, rootstock, root system, resistance/tolerance.