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Green chemicals for controlling root diseases of table beet and carrot

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SUMMARY

Green chemicals for controlling root diseases of table beet and carrot

This research project aimed at using alternative friendly chemicals with antioxidant properties to control soil and seed born fungi attacking both vegetable crops i.e.: Beetroot and carrot. As the detrimental effect on the roots of these 2 crops is due to aggressiveness of the 4 *spp.* of the fungi, *Fusarium*, *Rhizoctonia* and *Macrophomina* in case of beetroot and *Alternaria* in case of carrot, the research trials were advanced to find a promising chemicals to control these fungi. The experiments were carried out *in-vitro* and *in- vivo* during 2 successive seasons (2017, 2018). The Results revealed that seed of beetroot and carrot soak treatment in aqueous solutions of salicylic acid and ferrous sulfate at concentration of 1g/L; GAWDA[®] formulation, hydroquinone, humic acid, zinc sulfate and boric acid at a concentration of 2g/L; Potassium citrate, ascorbic acid, magnesium sulfate and manganese sulfate at a concentration of 4g/L offer a good range of protection against invasion of the above mentioned fungi and ramp up the plant growth. The effect of the antioxidants was explained by a number of researchers who concluded that the antioxidants are used to donate electrons to the free radicals of the detrimental chemicals absorbed by the plant cells during their life span. This process turns them to stable and innocuous molecules. The research finding also is supported with factual research work carried out by others on different vegetable crops.