

Joint Action of *Trichoderma atroviride* and a Vegetal Derived-Protein Hydrolysate Improves Yield, Fruit Quality of Two Woodland Strawberry Cultivars Grown Under Greenhouse

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Abstract

The aim of current research was to appraise the potential impact of two biostimulants [*Trichoderma atroviride* and a vegetal-based protein hydrolysate (V-PH)], when applied alone or in combination, on the performance of two woodland strawberry genotypes ('Alpine' and 'Regina delle Valli'). Overall, the results showed that 'Alpine' genotype was more productive than 'Regina delle Valli', although it revealed lower fruit qualitative features. The application of *T. atroviride* or V-PH resulted in a notable increase in terms of marketable yield (+20.5% and +12.9% for *T. atroviride* and V-PH, respectively) and anthocyanins (+14.1% and +9.8% for *T. atroviride* and V-PH, respectively) compared to the non-treated control. Plants from plots treated with both biostimulants (*T. atroviride* and V-PH) had higher marketable yield (+34.8%), flavonoid (+26.3%) and anthocyanins (+29.9%) compared to non-treated plants. Furthermore, our study highlighted that the highest fruit polyphenols concentration was observed in fruits from plants ('Alpine' and 'Regina delle Valli') treated with both microbial and non-microbial biostimulants and in those from 'Regina delle Valli' genotype exposed to V-PH. Our study suggests that the joint application of *T. atroviride* and V-PH is a useful approach for improving yield and fruit quality of woodland strawberry.