New Helminthosporal Analogues with Plant-Growth Regulatory Properties Synthesized *via* Oxyallyl Cation

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Microorganisms are a rich source of bioactive molecules which serve as models for the synthesis of new commercial agrochemicals. In this work we present the synthesis of eleven new bioactive analogues of helminthosporal, a fungal secondary metabolite with plant-growth regulatory activity. The compounds were prepared *via* a $[4+3]$ cycloaddition reaction between the oxyallyl carbocation generated from 2,4-dibromo-5-methylpentan-3-one and several substituted furans. The reactions yields revealed to be highly influenced by the bulkiness and electron withdrawing capacities of the substituents in the furans. The selective effect of all compounds **10a – f**, **11 – 14** on the radicle growth of *Sorghum bicolor* and *Cucumis sativus* were evaluated at the concentration of 10^{-3} *M*. All test compounds inhibited the sorghum roots growth (22 – 82%) and most of them stimulated the cucumber radicle growth (up to 127%).

Key words: Oxyallyl Carbocation, Herbicides, *Helminthosporium sativum*, Oxabicyclo, Growth Inhibition