

Chemical Basis for the Phytotoxicity of *N*-Aryl Hydroxamic Acids and Acetanilide Analogues

Héctor R. Bravo^{a,*}, Elisa Villarroel^a, Sylvia V. Copaja^a, and Victor H. Argandoña^b

^a Departamento de Química, Facultad de Ciencias, Universidad de Chile, Casilla 653, Santiago, Chile. Fax: 56(2)2713888. E-mail: scopaja@uchile.cl

^b Departamento de Biología, Facultad de Ciencias, Universidad de Chile, Casilla 653, Santiago, Chile

* Author for correspondence and reprint requests

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Germination inhibition activity of *N*-aryl hydroxamic acids and acetanilide analogues was measured on lettuce seeds (*Lactuca sativa*). Lipophilicity of the compounds was determined by HPLC. A correlation between lipophilicity values and percentage of germination inhibition was established. A model mechanism of action for auxin was used for analyzing the effect of the substituent at the alpha carbon atom (C α) on the polarization of hydroxamic and amide functions in relation to the germination inhibition activity observed. Results suggest that the lipophilic and acidic properties play an important role in the phytotoxicity of the compounds. A test with the microalga *Chlorella vulgaris* was used to evaluate the potential herbicide activity of the hydroxamic acids and acetanilides.

Key words: Hydroxamic Acids, Acetanilides, Phytoactivity