Abstract

Tobacco plants (Criollo 98) were sprayed with different concentrations (0, 0.1, 0.5, 1, 2.5 g.L⁻¹) of chitosan polymer 30 days after planting (dap). 14 days after treatment, variations caused by chitosan on plant growth were measured, using the following variables: number of leaves, stem and roots length and dry mass. Polymer treatments caused stimulation and inhibition of the variables measured depending on the chitosan concentration tested. Changes in the protein and reducing carbohydrate contents were, also, obtained in tobacco leaves sprayed with chitosan, mainly increments above control at 37 dap, depending on the polymer concentration tested. Nitrate reductase activity was just induced above control at 37 dap with the highest concentration (2.5 g.L⁻¹) tested. Also, defense markers evaluated were just induced, above control, at 33 dap, again depending on polymer concentration. α-1,3 glucanase activated at 1.0 g.L⁻¹, while PAL activated with the three highest concentration (0.5-2.5 g.L⁻¹) employed. According to results, there is no relation between the increasing of defense responses and changes on proteic and reducing carbohydrates content; however, due to the complexity of the induced resistance response, it is necessary to look deeper into this study by including other markers and different way of chitosan application.

Keywords

Chitosan, induced resistance, Nicotiana tabacum, plant response, enzyme activity.