SUMMARY

Growth stimulation of *Vanilla planifolia* Andrews using chitosan in *in vitro* culture

Chitosan is a biopolymer with effects as an elicitor on plant responses that have been demostrated in floral and harvest plants, as well as in some orchids. The purpose of the present research was to evaluate such effect using chitosan at concentrations of 15, 20, 25, 30 and 35 ppm in MS (Murashige and Skoog) medium in the multiplication phase of *Vanilla planifolia* Andrews cultured *in vitro*, eliminating BAP (6-benzylaminopurine), ANA (Naphthylactic Acid) and Cysteine growth regulators in semi-solid medium, using as a control the complete MS médium. The bioassays were performed in 10 containers for each treatment with three replicates. Growth parameters evaluated were number of shoots, numbefr and color of leaves and number of roots. Results showed that the optimum concentration for a greater number of shoot growth, leaf and roots was 20 ppm, showing an average of 10.1 ± 1.1 in shoot growth, 7.50 ± 0.65 in leaf and roots 4.52 ± 0.5, compared with the MS médium, whose mean was of 7.8 ± 0.90. In addition, chitosan promoted greater elongation of the plants, greater number of shoot growth and roots production in the multiplication phase. Results of the antimicrobial effect showed that at 2% there is only some damage to the cell wall of the mycelium of the fungi tested and in the reproduction structures. One antimicrobial effect was observed at a concentration of 3%, with a mycelial inhibition of 90%, observing that the 10% of the mycelium that could develop corresponded to a sterile mycelium. Finally, we can conclude that this research proposes the use of the chitosan in the *in vitro* culture of *Vanilla planifolia* Andrews to stimulate the development and growth of plants, with greater production, in less time and less cost.

Key words: Orchids, chitosan, growth, development, inhibitor.