

INFLUENCE OF CARBON AND NITROGEN SOURCES ON THE YIELD OF PIGMENT SCLEROTIORIN BY *Penicillium sclerotiorum*

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Abstract:

The fungal pigment has aroused great interest with the globalization on research trends, due to the low toxicity and better biodegradability presenting greater compatibility with the environment. Obtaining fungal pigment is a promising alternative to vegetable and animal origin, since they have no seasonality issues and allows the production in a small space and large-scale. Sclerotiorin is a yellow-orange pigment and belongs to the class of azafilonas. It has been isolated from many other filamentous fungi and has very interesting biological activities such as antibacterial activity, antifungal, antioxidant and anti-inflammatory and inhibition of some important enzymes such as the aldose reductase, lipase and integrase and protease of human immunodeficiency virus (HIV-1). Sclerotiorin has been employed in the food industry and in the inhibition of lipoxygenase. In this context, the aim of this study was to evaluate the influence of carbon and nitrogen sources on the yield of pigment sclerotiorin by *Penicillium sclerotiorum*. For this research, 17 experiments were performed in triplicate by submerged fermentation in liquid medium Czapeck, using univariate analysis, which evaluated the effect of sucrose concentration (carbon source) and concentration of peptone (nitrogen source) in the production of pigment sclerotiorin. The carbon source was evaluated at concentrations of 0, 30, 60 and 90 g / L and it was observed that the most favorable for the production of the pigment was 60 g / L compared to the other concentrations. And the nitrogen source more favorable for the production of pigment was 6g / L compared with concentrations of 0.3 and 6.9 g / L. In this study, the concentration of carbon and nitrogen source exerted a great influence on the increase or decrease in yield in the synthesis of sclerotiorin pigment.

Keywords: pigment, sclerotiorin, carbon and nitrogen sources

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