RESUMO SIMPLES - CAGR - CIÊNCIAS AGRÁRIAS

PRODUCTION OF BEGONIA SEMPERFLORENS FLOWERS USING FLOATING RAFT HYDROPONIC TECHNIQUE

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The current market for edible flowers for gourmet food demands high standards of quality and safety, which can be achieved through hydroponic cultivation techniques. This study aimed to evaluate the production of Begonia semperflorens flowers in a floating raft hydroponic system. The study was conducted in two stages from January to March 2025 in the “HidroSpark” university garden of the Universidad Nacional Mayor de San Marcos (Lima, Peru). In the first stage, four adaptation strategies of these plants to hydroponic conditions were explored. The strategies consisted of placing, in quintuplicate, soil-rooted plants and ~8 cm cuttings on floating rafts in water with and without dissolved mineral nutrients for one week. The nutrients from commercial concentrated solutions “A” and “B” containing macro and micronutrients were dissolved in water at a rate of 5 mL/L and 2 mL/L, respectively. The plants appeared completely healthy and with the appearance of aquatic roots only when the strategy of placing them as cuttings on a floating raft in nutrient-free water for one week was followed. In the second stage, this adaptation strategy

was successfully validated with 35 cuttings of different lengths (3.5-10.9 cm). This stage also included the addition of nutrients after the adaptation week and the assessment of the plant development during three weeks. Since flower production is the goal of commercial cultivation of this species, a multiple linear regression model was applied to predict it using cutting length, root length, and cultivation time as predictor variables. The model was statistically significant ($p=1.642E-11<0.05$), but only explains a part of the variability in flower production ($R^2 = 26.7\%$). Each of the predictor variables was shown to be influential ($p<0.05$) on flower production, with cultivation time standing out as the variable that most affects it. These results form the basis for proper management of hydroponic cultivation of Begonia semperflorens and could enhance its gourmet and agro-industrial use.

Palavras-chave: wax begonia; edible flowers; soilless cultivation.