Different species of basil need different ammonium to nitrate ratio in hydroponics' system

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ABSTRACT:
Basil is a very important medicinal plant and culinary spice, and is marketed fresh, dried or frozen. In crop nutrition, nitrogen is essential for plant growth and as a macro-element, is part of the proteins' structure and participates in the metabolic processes involved in the synthesis and energy transfer. It has been shown that a balance between ammonium and nitrate favors plant growth and that the degree of benefit varies among crops. This study was conducted to evaluate the growth of two variety of basil in function of four nutrient solutions containing different NH_4^+/NO_3^- ratios. Results showed that different variety response differently to nutrient solution. Although the highest yield in both variety obtain when fed by nutrient solution without ammonium but their response on quality indices were different due to nitrate to ammonium ratio in nutrient solution. The highest total phenol content of sweet and purple basil was 92 and 100 mg gallic acid equivalent per gram of dry weight, respectively while the highest number of antioxidant capacity was obtained in purple variety nutrient with nutrient solution 2 (NH_4^+:1/NO_3