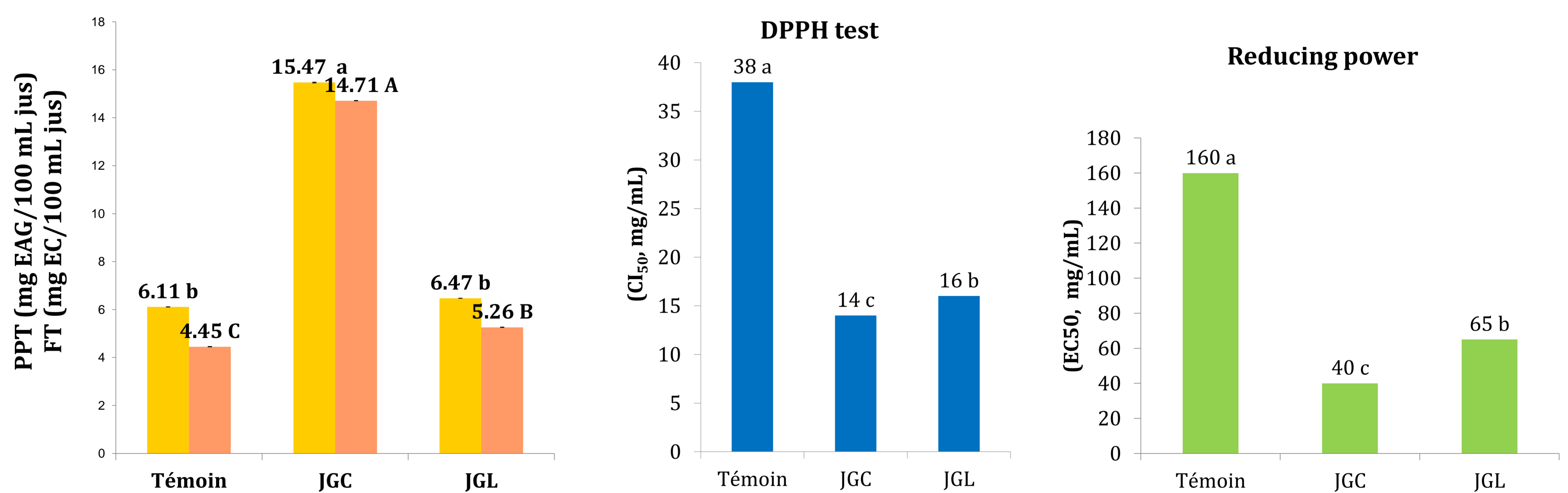


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**Background:** Pumpkin is grown all over the world, from the United States to China, India, Tunisia, and Europe, being one of the most economically important species cultivated worldwide. Adopting a healthy diet is pivotal in preventing various forms of malnutrition and a plethora of diseases. Pumpkin seeds, belonging to the *cucurbitaceae* family, possess diverse pharmacological activities, including antioxidant properties

**Materials/Methods:** The research methodology involved the assessment of phenolic and flavonoid content in the various samples: pumpkin seed-enriched juice, flax seed-enriched juice, and a control juice. The quantification of phenolic compounds and flavonoids was conducted using colorimetric methods. Subsequently, the antioxidant activity of the juices was evaluated using the DPPH (2,2-diphenyl-1-picrylhydrazyl) test and the reducing power assays. The  $IC_{50}$  and  $EC_{50}$  values, representing the concentration required for a 50% reduction in oxidants, were determined for each juice. A lower  $IC_{50}$  or  $EC_{50}$  value indicates more potent antioxidant activity. In addition to the quantitative assessments, a comprehensive sensory analysis was conducted to gauge the organoleptic attributes of the juices. Panelists evaluated the color, taste, aftertaste, and texture of each sample.



The findings illuminated substantial disparities between the samples. Remarkably, the pumpkin seed-enriched juice emerged as the frontrunner, boasting the highest total phenolic content (15.5 mg EAG/100 ml) and flavonoid content (14.7 mg EC/100 ml). These values markedly outperformed both the flax seed-enriched and control juices. In terms of antioxidant prowess, the pumpkin seed-enriched juice exhibited the lowest  $IC_{50}$  value (14 mg/ml), signifying superior antioxidant activity. The flax seed-enriched juice closely followed with an  $IC_{50}$  value of 16 mg/ml, while the control juice lagged behind with the highest  $IC_{50}$  value (38 mg/ml). Sensory evaluation corroborated these findings, with the pumpkin seed-enriched juice securing the highest scores for color, taste, aftertaste, and texture. Collectively, this investigation underscores the tremendous potential of pumpkin seed-enriched juice as a functional and healthful beverage. Its notable richness in phenolic compounds and flavonoids, coupled with robust antioxidant capabilities, positions it as a promising addition to a balanced diet, appealing to discerning palates while offering a wealth of nutritional benefits

