

# **XXVth EUCARPIA Maize and Sorghum Conference**

*Current Challenges and New Methods for Maize and Sorghum  
Breeding*

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## POTENTIAL AND ADVANTAGES OF COLORED MAIZE HYBRIDS APPLICATION IN BAKERY PRODUCTS

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Apart from its significant influence on the technological properties of bread, pigmented maize has gained newfound attention from a nutraceutical perspective due to its potential health benefits. The present study was carried out to demonstrate the effects of different maize flour on the physical, textural and sensory properties of composite breads. Chemical characterization of composite flours made with four different types of color maize was assessed. Furthermore, the content of total phenolics, flavonoids, anthocyanins, in composite flours was determined. Composite flour with blue maize had a higher total phenolic content (1380.07 mg GAE/kg d.m.) than those with yellow and red maize (1037.28 and 1129.45 mg GAE/kg d.m., respectively) as well as with light blue maize (976.45 mg GAE/kg d.m.). The total flavonoid content did not vary greatly among composite flour samples. Results demonstrated a maximum anthocyanin level in the blue maize composite flour (286.79 mg CGE/kg d.m.), which was higher by approximately 70% and 38% than the level measured in the light blue and red maize composite flours, respectively. In the yellow maize composite flour anthocyanins were not detected. The data for the physical and textural analysis of composite bread reveal that the loaf volume of the colored maize composite bread samples ranged from 182.50ml to 188.01ml. Red maize composite bread showed the lowest crumb hardness, the highest loaf volume and specific volume as well as the highest springiness value. Maize composite bread loaves had a typical and pleasant odor and taste, and the aroma was very intensive. Results obtained might be beneficial to further study how ingredient proportion, improvers or processing conditions affect the textural and sensory attributes of the final product from composite maize flour.

**Keywords:** *coloured maize, bread, textural properties, sensory properties.*