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## **Antioxidant and biochemical content in Brazilian guava germplasm with white, red and pink pulps**

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Guava is considered to be an excellent source of antioxidant compounds due to the high content of lycopene and vitamin C. The international guava market is dominated mainly by white pulp fruit, differing from the Brazilian market, which pays a high price for guava cultivars with dark red pulp fruit. The goal of the present study was to analyze the content of Brazilian guava accessions contrasting for pulp colors to support the breeding program of guava, focusing on cultivars producing fruits with a high content of functional compounds. Sixty guava accessions established in a field germplasm bank, at Embrapa Tropical Semi-Arid, Petrolina, Pernambuco State, Brazil, were evaluated for total antioxidant activity, phenolic compounds, ascorbic acid, flavonoids, lycopene and beta-carotene, titrable acidity, soluble solids and total soluble sugars. The accessions, including guavas of white (n = 10), red (n = 23) and pink pulp (n = 27), were grown in a block design experiment, with two replications/ accession. An ANOVA was performed, decomposing the degrees of freedom for the three pulp color groups in order to test the contrast to the nine evaluated compounds. The accessions presented high variability ( $p < 0.01$ ) for all compounds. Guava white pulp did not presented variability for the majority of compounds, except soluble solids, while guava red and pink pulps presented high variability ( $p < 0.01$ ) for most compounds, except flavonoids in pink pulp guava and flavonoids, beta-carotene, soluble solids and total sugars in red pulp fruit. The white\*red and pink pulp contrast was significant ( $p < 0.01$ ) for most compounds, except for titrable acidity and soluble solids, with the greater mean values found in the accessions of pink red pulp, except for total soluble sugars. The red\*pink contrast was also significant ( $p < 0.01$ ), except for titrable acidity and soluble solids, with greater values found in the accessions of red pulp fruit, except for lycopene and total soluble sugars. The compounds mean values were, approximately, 1.5, 1.4, 1.7, 1.8, 2.7 and 3.1 times greater for antioxidant activity, phenolic compounds, ascorbic acid, flavonoids, lycopene and beta-carotene, respectively, quantified in the pink and red pulp guava accessions when compared to white pulp. These results

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indicated that pink and red pulp guavas have a potential of greater beneficial contribution to the human diet than white pulp guava.

**Keywords:** *Psidium guajava*, Brazilian accessions, functional compounds

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