AFLATOXINS, PHENOLIC COMPOUNDS AND ANTIOXIDANT CAPACITY IN CHOCOLATE PRODUCED FROM CONVENTIONAL AND “WITCH BROOM” RESISTANT CULTIVARS OF COCOA IN BRAZIL

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Aflatoxins represent the group of the most studied mycotoxins, especially due to their widespread occurrence in foods, toxicological and carcinogenic potential associated with their consumption. The World Health Organization recommends a systematic control of aflatoxin level in the population diet, mainly in countries located in tropical and sub-tropical areas, where climatic conditions promote the growth of aflatoxin-producing fungi. In recent years, there has been an increase in interest in polyphenols and their derivatives because they are important sources of phenolic compounds. Studies have shown that the consumption of cocoa products has a positive effect on health. The cocoa were evaluated concerning aflatoxins B1, B2, G1 and G2 contamination by thin-layer chromatography (TLC), in parallel to quality characteristic targeted on phenolics compounds by Folin Ciocalteau method and antioxidant activity by DPPH method. The reduction of DPPH radical was measured by the continuous monitoring of the decline in absorbance at 517 nm for 30 minutes in the dark until values stable absorption. In all samples of chocolate produced from conventional and “witch broom” resistant cultivars of cocoa, aflatoxins were not detected. The conventional chocolate (19.11mg.g⁻¹) showed higher content of phenolic than the others cultivars, SR162 e PH16, with 16.08mg.g⁻¹ and 15.46mg.g⁻¹, respectively. The chocolate sample with the highest antioxidant activity is the SR162 (15.15 ± 1.88 µg.mL⁻¹), followed by Conventional (19.20 ± 0.55 µg.mL⁻¹) and PH16 (20.47 ± 1.86 µg.mL⁻¹), with the lowest antioxidant activity of the three varieties.

Key words: Theobroma cacao, antioxidant activity, bioactive compounds.

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