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Production of Anthocyanin-rich Rose Extract by Enzymatic Maceration

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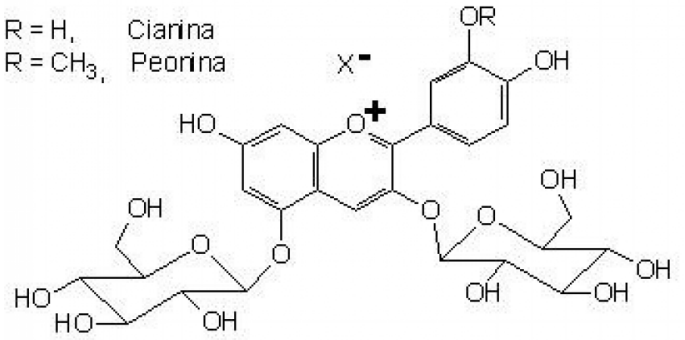
PURPOSE OF THE ABSTRACT
The Brazilian floriculture moves, annually, a global value around US$ 1.2 billions per year, being 95% in the internal market, with a consumption around US$ 6.50 per capita. The main wholesale markets are concentrated in the State of São Paulo, representing 37.5% of the Brazilian market [1,2]. Among the cut flowers planted in the open air, one of the most important is the roses, being popular all over the world, and commercialized in the most varied forms and colors. The substances responsible for this variety in the coloring of the roses are the flavonoids, mainly the anthocyanins peyonine and cyanine, which can be seen in Figure 1 [3]. Anthocyanins are extracted from their plant matrices by polar solvents such as methanol, ethanol, acetone, water and mixtures between them. The addition of small amounts of hydrochloric or formic acid to the solvents is recommended to prevent the degradation of non-acycled anthocyanins. However, small amounts of acid can cause partial or total hydrolysis of acyl groups [4,5]. To avoid degradation of anthocyanins and to use a cleaner extractive method, this work proposes the enzymatic maceration of rose petals to obtain an extract rich in anthocyanins. Thus, initially, a comparison was made of the extractions with water, ethanol and their mixtures in the presence or absence of enzymes, and the optimization of experimental conditions, such as enzyme concentration, petal/extractor liquid ratio and ethyl alcohol concentration in the extractor liquid.

FIGURES



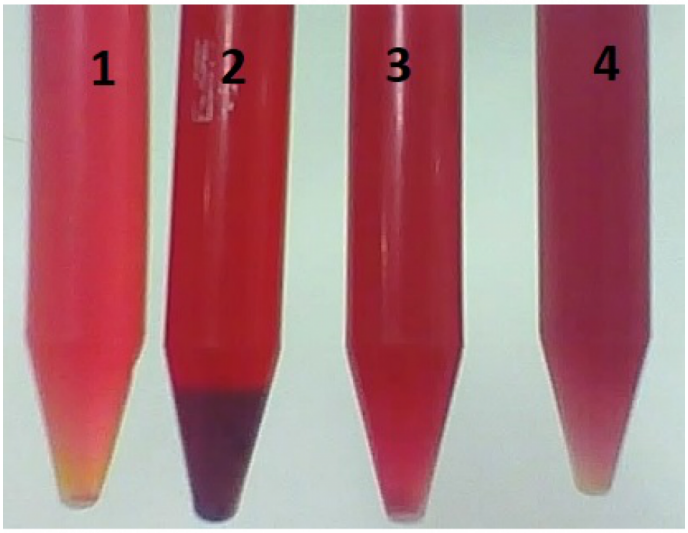


FIGURE 1

General structure of Anthocyanin

Figure 1

FIGURE 2

Comparison of extraction methods of rose anthocyanins

1 – Water;

2 – Cellulase;

3 – Hemicellulase;

4 – Ethanol 100%

KEYWORDS

Rose | Anthocyanin | Cellulase | Hemicellulase

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