

Health-Promoting Compounds in Pigmented Thai and Wild Rice

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Introduction. Pigmented rice and wild rice are gaining popularity among consumers due to the increasing awareness of a need for healthy foods. As a matter of fact, pigments such as carotenoids and anthocyanins, responsible for food color, act as bioactive compounds modulating a number of physiological functions and possibly promoting health [1,2].

Materials and methods. The study (using instrumentation and chemicals) included the following steps:

- Sampling
- Preparation of Raw and Cooked Samples for Analysis
- Proximate Analysis
- Extraction and Determination of Carotenoids
- Extraction of Free Phenolic Compounds
- Extraction of Insoluble-Bound Phenolic Compounds
- Determination of Total Free and Insoluble-Bound Phenolic Compound Content
- Extraction and Determination of Anthocyanins
- Statistical Analysis

Results and discussion. This study provides a portrait of Thai pigmented rice and wild rice available in terms of proximate composition and health-promoting compound content. In addition to phenolic compounds and anthocyanins, that are the most investigated bioactive molecules in pigmented rice, carotenoid content has been also evaluated, thus providing a more complete profile of the antioxidant content in samples under investigation. As in other cereals, lutein was found to be the main carotenoid and anthocyanins were detected only in black samples. In contrast to other cereals, phenolic compounds were found mainly in free form.

The effect of cooking on these components was also assessed, to more accurately determine the true dietary intake of health-promoting compounds through Thai and wild rice consumption.

This study also highlighted that the content of bioactive compounds in samples was comparable to other foods; therefore, the Thai and wild rice varieties under investigation can contribute to increased dietary intake of phytochemicals.

Conclusions.

Results from this study provide reliable data for inclusion in comprehensive food composition databases which include health-promoting compounds. Finally, the study provides information about the quality of imported food products that is usually overlooked.

References

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