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ISHS Acta Horticulturae 1111: XXIX International Horticultural Congress on Horticulture: Sustaining Lives, Livelihoods and Landscapes (IHC2014): IV International Symposium on Papaya, VIII International Pineapple Symposium, and International Symposium on Mango

Pineapple is a super fruit, but how much can it be consumed?

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Abstract:

Pineapple can be regarded as a super fruit with profound ethnopharmacological effects. Bromelain is an important compound in pineapple, which has been scientifically proven to have enormous health benefits. Pineapple is served as fresh fruit or juice, but how much to consume to gain its health benefit is not definitive. This is a technical paper aimed to answer why we need to consume pineapple on a regular basis and to establish any limitations. Juice from fruit pulp, fruit core and stem parts of cultivar 'Gandul' was extracted and the bromelain in the juice was quantified. The juices were then tested in vitro for their potential to inhibit cancer cells, in particular A2780 (breast) and HT29 (colon). The study found that the extracted pineapple juice was able to inhibit cancer cell growth. The juice from the pulp was most effective with IC_{50} of $280.54 \mu\text{g mL}^{-1}$ after 24 h and $104.95 \mu\text{g mL}^{-1}$ after 48 h for A2780 and HT29, respectively. Bromelain in juice was subjected to stomach digestion tests to assess how much bromelain could pass through the stomach and enter the blood stream. Our study also found that the pulp from the Malaysian commercial pineapple cultivar 'Gandul' possesses four to eight times higher bromelain content compared to other cultivars. We

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