A review of evidence of nutritional and health benefits from consumption of fruits with a high content of nutrients and phytochemicals - with reference to the term *Superfruits* - and effect of genotype and agronomic aspects on their quality.

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- Ten years of FAO-WHO collaboration on promoting consumption of fruit and vegetables for their health benefits.
- Globally, overall per capita consumption of fruit and vegetables falls far short of minimum daily recommended level of 400 grams per capita.
- Intake generally 20 - 50 % of the minimum recommended level.

- Review – considered over 3000 published scientific papers and other documents.
- Research focused particularly on antioxidant activity of many bioactive molecules present in fruits, esp. phenolics and carotenoids.
- Lack of proof of direct relationship between consumption of natural antioxidants and disease prevention.

- Incomplete understanding of physiological mechanisms underlying observed or claimed benefits of phytochemicals for human health.
- Evidence inconclusive and scientific opinion divided on whether antioxidant behaviour of phytochemicals in fruit is the main factor underpinning health benefits.
- Results obtained *in vitro* and *in vivo* inconsistent, sometimes contradictory, and overall inconclusive.

- Standard methodologies needed for measuring, comparing and differentiating among fruit phytochemical components.
- Evidence base for being able to declare certain fruits more *super* than others appears less than solid.

- Examples of uncertainty:
  - Which phenolic compounds assayed?
  - How to situate observed genotypic and environmental agronomic determinants of variability in phytochemical content?
  - Which portions of fruits considered?
  - Relevance of seed content of phytochemicals?

- Comprehensive studies also needed on interactions of various phytochemicals present in fruit with each other/other foods in the diet.
- Postulates about health-protecting properties developed through studies *in vitro* need scientific corroboration *in vivo.*
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In conclusion…

- Superficial use of weakly supported health claims and selective *superfruit* classifications could be counter-productive and self-limiting in the long term.
- Generic use of the term *superfruit* for *all* fruits could have value.

THANK YOU FOR YOUR ATTENTION

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