

Phytochemicals in *Capsicum annuum* L. Fruit

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Summary

Capsicum fruit vary greatly in polyphenol and capsaicinoid content, and it is clear that levels of these health-promoting compounds are influenced by genetics, environmental growing conditions, and maturation. The genetic component is thought to play a more significant role than environmental factors in influencing phytochemical content, indicating excellent potential for plant breeders and molecular biologists to increase levels of bioactive compounds in *Capsicum* fruit. There is increasing evidence from *in vitro* and *in vivo* studies that flavonoids and capsaicinoids exhibit health-promoting properties. While these studies have provided insight into potential mechanisms associated with health promotion, focused clinical trials are needed to establish whether the compounds provide therapeutic effects in humans.