

CHAPTER VII

CONCLUSION

Sweet pepper (*Capsicum annuum* L.) has various colors including green, red, yellow and orange. The characteristic of sweet pepper is not spicy, so it can be consumed in large amount, both in fresh and cooked forms. In addition, sweet pepper is a rich source of carotenoids and phenolic compounds, which have antioxidant activities to promote health benefits. This study investigated carotenoid contents, phenolic compounds, volatile compounds, anti-obesity (lipase inhibitory activity), anti-diabetes (α -amylase and α -glucosidase inhibitory activity) and anti-hypertension (ACE inhibitory activity) of four colored sweet peppers including green, red, yellow and orange using different solvents. The different colored sweet pepper and extracted solvents possessed different phytochemical and biological properties. As results, each colored sweet pepper had different quality and quantity of carotenoids, flavonoids, phenolic acids and volatile compounds. Red sweet pepper contained the highest total carotenoids. Green sweet pepper contained the highest total phenolic acid contents. Yellow sweet pepper had the highest total flavonoid contents.

The investigation on prevention of obesity, diabetes and hypertension suggested that red sweet pepper exhibited the highest lipase, α -amylase, α -glucosidase and ACE inhibitory activities. Besides, it was suggested that enzyme inhibitory activities were associated with the quantity of phenolic compounds. In addition, the results could be suggested that solvent extractions affect the enzyme inhibitory activities. Sweet peppers extracted with 70% (v/v) aqueous ethanol exhibited higher lipase, α -glucosidase and ACE inhibitory activities than those extracted with ethyl acetate and hexane. Nevertheless, α -amylase inhibitory activity exhibited the highest in ethyl acetate extracts while hexane extracts showed the lowest enzyme inhibitory activities. The comparison of biological properties against lipase, α -amylase, α -glucosidase and ACE activities of sweet peppers suggested that sweet peppers had strong ACE inhibitory activity, high lipase and α -glucosidase inhibitory activities

while α -amylase inhibitory activity was low. This information can provide fundamental knowledge to promote the consumption of sweet pepper as the good choices for prevention and treatment obesity, diabetes and hypertension.