VI CONCLUSION

In conclusion, the HPLC method to determine bioactive glucosinolates and phenolic compounds in Thai broccoli seeds has been established. The assay procedure is simple, accurate and validated. The chromatographic data were compiled and analysed by a specific software (ChemStation v.6.03) which was installed and validated by the Agilent corporation. All the data files can be retrieved for further analysis in the SPSS program of ANOVA analysis. Data in all appendices are real data without any single modification.

The research results in this dissertation have revealed some crucial findings in term of cultivar selection. The better hope for the better broccoli for the Thai dishes, plant breeders now have the Thai broccoli seeds data. The nutritional values of glucosinolates were more understood along with the knowledge of how to select a better broccoli in our domestic market to serve the Thai customers. Since the HPLC analysis of glucosinolates in broccoli seeds which is the essential element also has been available, therefore the development of broccoli breedings for seeds with higher content of glucosinolates could be further investigated.

Nevertheless, in selecting the right cultivar for any special purpose, one might have to look at the summarized information chart which was extracted and tabulated from the result and discussion sections (*see* Table 6.1, page 108). It suggested that phenolic compouds are response for antioxidant activity of broccoli seeds. The 'Top Green #067' cultivar is overall ranked top in term of overall active

principle contents, followed by 'Packman', 'Green Queen', 'Pak Ging' and 'Rod Fai' cultivars, respectively. These findings indicated that total glucosinolates contents had higher correlation with antioxidant contents. However, the organoleptic taste preference should also be considered as well. In the final analysis, which particular cultivar is the best and suitable for people in different regions of the country remain to be seen. The more pungent taste will most likely be from the cultivar that posseses high level of sulfur compounds, *e.g.* 4-methylsulfinylbutyl glucosinolate. Perhaps, 'Rod Fai' cultivar can be the most successful broccoli in Thailand after all, for people prefer smooth vegetable taste. The high potency of glucosinolates found in 'Top Green #067' cultivar may be reserved for pharmaceutical/ nutraceutical applications.

Table 6.1 Combination of data from Section 4.3.1.1.2, 4.3.1.2.2, Tables 4.21 and 4.24, and ranking of antioxidant activity, contents of phenolics compounds, vitamins C and E and β-carotene.

Rank No.	Antioxidant activity				Contents of substances analysed					
	ABTS assay			FRAP assay						
	Ascorbic acid	Quercetin	TEAC		Phenolics	Flavonoids	Flavonols	Ascorbic acid	Tocopherols	β-carotene
1	*Pak Ging*	Green Queen	Packman	Packman	**Top Green #067**	**Top Green #067**	**Top Green #067**	**Top Green #067**	**Top Green #067**	**Top Green #067**
2	Packman	**Top Green #067**	*Pak Ging*	**Top Green #067**	Green Queen	*Pak Ging*	Packman	Packman	Green Queen	*Pak Ging*
3	**Top Green #067**	Packman	**Top Green #067**	Green Queen	Packman	Green Queen	*Pak Ging*	Green Queen	*Pak Ging*	Packman
4	Green Queen	*Pak Ging*	Green Queen	*Pak Ging*	*Pak Ging*	Packman	Green Queen	*Pak Ging*	Packman	Green Queen
5	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai	Rod Fai