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APPENDICES

Appendix A

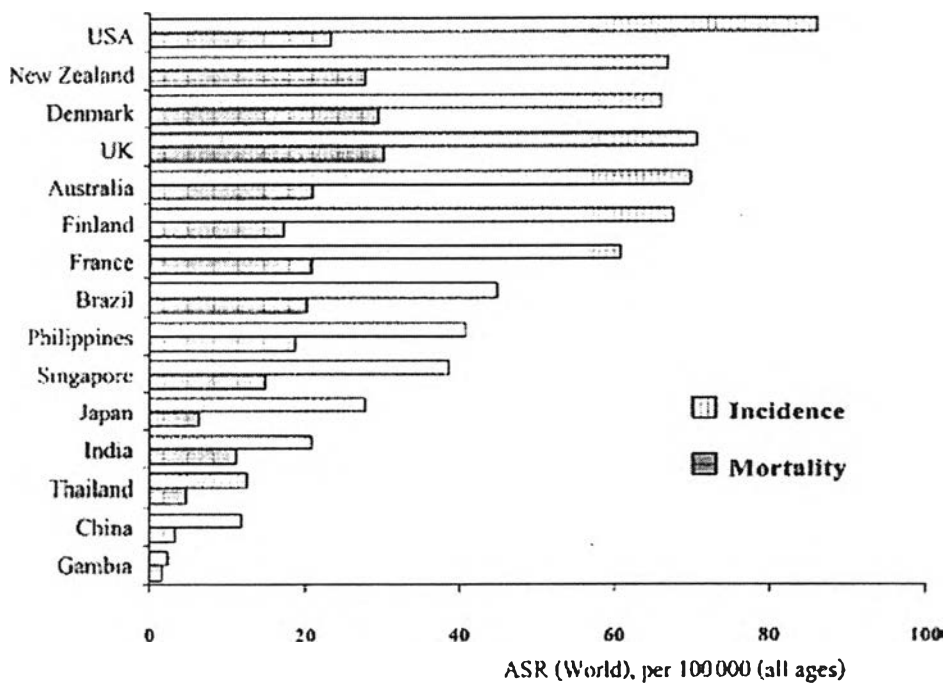


Figure 1 Annual breast cancer incidence and mortality of female, Thailand and others (Ferlay et al., 1998)

Appendix B

Table 1 Epidemiologic studies involving phytoestrogen product intake and breast cancer risk

Sources	Subject (Population/Country)	Case/Control	Results	References
Cohort study				
Miso soup	Combined (Japanese/Hawaii)	86/ 6,860	SS decreased risk	Nomura et al., 1978
Miso soup	Combined (Japanese)	241/2,140,369	NSS	Hirayama et al., 1990
Miso soup	Combined (Japanese)	427/488,989	SS decreased risk (5 times/week)	Key et al., 1999
Genistein	Combined (American)	711/ 222,249	NSS	Horn-Ross et al., 2002
Isoflavones and lignans	Combined (Dutch/ Netherlands)	280/ 15,555	NSS	Keinan-Boker et al., 2004
Case-control study				
Soybean product fat	Combined (Japanese)	212/212	NSS	Hirohata et al., 1985
Soy protein, Total soy product	Pre & post menopause (Chinese/Singapore)	200/ 420	SS decreased risk only pre menopause in high consumption (≥ 55.0 g/day)	Lee et al., 1991
Isoflavones	Post menopause (Finlandia)	9/10	SS decreased risk on isoflavones secretion	Aldercreutz, et al., 1992
Tofu	Pre & post menopause (Chinese/China)	1,186/21,295	SS decreased risk only pre menopause in high consumption (> 3 times/week)	Hirose et al., 1995
Soy protein	Combined (Chinese)	834/834	NSS	Yuan et al., 1995

NSS = Not statistically significant, SS = Statistically significant

Table 1 Epidemiologic studies involving phytoestrogen product intake and breast cancer risk (Continued)

Sources	Subject (Population/Country)	Case/Control	Results	References
Tofu	Pre & post menopause (Asian-American/USA)	597/966	SS decreased risk in high consumption (1 time/week)	Wu et al., 1996
Tofu or soybeans	Combined (American and Canadian)	140/222	SS decreased risk (1 time/week)	Witte et al., 1997
Diet	Early breast cancer patient (Australian)	144/144	SS decreased risk on high equol and enterolactone secretion	Ingram et al., 1997
Lignans	Pre & post menopause (Finlandia)	208	SS decreased risk in high intake	Pietinen et al., 2001
Soy protein	Combined (Chinese)	1,459/1,556	SS decreased risk (> 139.1 g/week)	Dai et al., 2001
Diet	Pre menopause (Dutch)	82/268	NSS on genistein and enterolactone secretion	Den Tonkelaar et al., 2001
Lignans	Pre & post menopause/ USA	207/188	SS decreased risk in high intake only in pre menopause	McCann et al., 2002
Isoflavones, lignans	Pre & post menopause (Non-Asian American/USA)	1,326/1,657	NSS decreased risk 1000 µg/day)	Horn-Ross et al., 2001
Isoflavones	Pre & post menopause (Asian-American)	501/594	SS decreased risk in high intake (>12.68 mg/1000 kcal)	Wu et al., 2002
Isoflavones, lignans	Post menopause (Finlandia)	9/10	SS decreased risk on isoflavones secretion	Aldercreutz, et al., 1992
Isoflavones	Pre & post menopause/ Singapore	620	SS decreased risk in high intake only pre menopause	Lee et al., 2003
Dietary isoflavones	Combined/ (UK)	114/219	SS decreased risk in equol and daidzein secretion	Grace et a., 2004

NSS = Not statistically significant, SS = Statistically significant

Appendix C

Table 2 Proximate analysis of *P. mirifica* and *Butea superba* tuberous roots (dry weight basis) by Polarimetric Method

Parameter	<i>P. mirifica</i>	<i>B. superba</i>
% Starch	27.50 ± 0.12	16.59 ± 0.05
% Protein	7.31 ± 0.01	7.35 ± 0.05
% Fat	0.57 ± 0.09	0.94 ± 0.05
% Fiber	10.92 ± 0.16	26.16 ± 0.83
% Ash	3.69 ± 0.95	1.36 ± 0.12
% Carbohydrate**	77.51	64.19
Total (kcal/100 g.)	144.37	104.22

Value are mean ± S.D.

** 100 – (% Protein + % Fat + % Fiber + % Ash)

Appendix D

Preparation of histological reagents

1. 10% buffer formalin

- Formalin (40%)	100	ml
- Di-distilled water	900	ml
- Natrium dihydrogen phosphate-monohydrated ($\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$)	4	g
- Disodium hydrogen phosphate anhydrous (Na_2HPO_4)	6.5	g

The chemicals were mixed together in the dark bottle, the solution was shaken until completely dissolved. This solution was stored at the room temperature.

2. Ehrlich's acid haematoxylin and eosin

- Haematoxylin	8	ml
- Absolute ethanol	400	ml
- Ammonium alum	8	g
- Di-distilled water	400	ml
- Glycerine	400	ml
- Glacial acetic acid	40	ml

Haematoxylin was dissolved in absolute ethanol in water bath at 40-50°C. When the solution was cool, it was filtered with the aid of Whatman No.1 paper. Then ammonium alum was dissolved in warm di-distilled water. The two solutions were mixed together, and then glycerine and glacial acetic acid were added and stirred until completely dissolved. The solution needs to expose to daylight to ripen for at least 6 weeks.

3. Eosin

- Eosin Y 0.5 g
- 95% Ethanol 100 ml

Eosin was dissolved in ethanol until the solution was completely dissolved and stored at the room temperature.

BIOGRAPHY

Miss Rattana Panriansaen was born on January 18, 1973 in Khon Kaen province, Thailand. She received her Bachelor of Science in Biology, Faculty of Science, Khon Kaen University in 1995, and graduated with a Bachelor of Arts in Political Science, Faculty of Political Science, Ramkamhaeng University in 1996. She got MasterDegree in Biotechnology program, Faculty of Science, Chulalongkorn University in 2000. She has studied for Program of Biotechnology, Faculty of Science Chulalongkorn University since 2000 and worked at Program of Applied Thai Traditional Medicine, Faculty of Science and Technology, Suan Sunandha Rajabhat University.

