

### CHAPTER III

### RESULTS



Since the process of the determination of folic acid content in samples is quite complicated, therefore the reproducibility of this estimation was performed in the present study.

A pool sample of fish sauce was simultaneously determined 20 times for folic acid content. A mean value  $\pm$  one standard deviation of folic acid content was found to be  $25.25 \pm 2.65$  pg/ml (range 21.50 - 32.00) with a standard error of 0.59. The individual values of these determinations are shown in Table 2.

Table 2  
Reproducibility  
Fish sauce, diluted 1 : 20

No.	Volume (ml)	Absorbance	Folic Acid Content (pg/ml)
1	0.5	0.141	28.0
2	0.5	0.122	22.5
3	0.5	0.120	22.0
4	0.5	0.138	26.0

Table 2 (continued)

No.	Volume (ml)	Absorbance	Folic Acid Content (pg/ml)
5	0.5	0.130	24.0
6	0.5	0.132	24.5
7	0.5	0.131	24.5
8	0.5	0.140	27.5
9	0.5	0.141	28.0
10	0.5	0.140	27.5
11	0.5	0.135	25.5
12	0.5	0.119	21.5
13	0.5	0.140	27.5
14	0.5	0.136	25.5
15	0.5	0.154	32.0
16	0.5	0.131	24.5
17	0.5	0.120	22.0
18	0.5	0.137	26.0
19	0.5	0.128	23.5
20	0.5	0.122	22.5
	Mean		25.25
	S.D.		2.65
	S.E.M.		0.59

Results of the free folic acid, conjugated and total folic acid contents in 20 samples of fish sauce are shown in Table 3. It was evident from the table that the conjugated folic acid content was about 2.2 times that of the free folic acid activity. There were the direct relationship between these 3 folic acid activities and the price (baht/bottle) in these samples of fish sauce as shown in Fig. 3 - 5.

Table 3  
Folic acid content of fish sauce

Commercial name	Price/720 ml Bot. (Baht)	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Chang-Sam-Sian ช้างสามเศียร	5.00	60.00	104.40	164.40
Dee-den ดีเด่น	2.50	14.70	89.70	104.40
Dek-uan เด็กอ้วน	3.00	30.00	68.40	98.40
Mue มีอ	2.50	7.80	31.80	39.60
Nampla-tae น้ำปลาแท้	10.00	168.00	228.60	396.60
Phra พระ	2.00	14.40	57.60	72.00
Phra พระ	8.50	48.00	212.40	260.40
Pikul-tong พิкулทอง	11.00	100.80	379.60	480.40

Table 3 (continued)

Commercial name	Price/720 ml Bot. (Baht)	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Pla ปลา	1.00	1.20	37.50	38.70
Pla-tong ปลาทอง	2.00	21.30	134.70	156.00
Pla-tong-koo ปลาทองคู่	2.50	17.40	45.00	62.40
Puangmalai พวงมาลัย	2.50	13.80	46.20	60.00
Puangmalai-rua พวงมาลัยเรือ	2.50	16.20	77.40	93.60
Raburd-para-manoo ระเบิดปรมาณู	4.00	63.60	109.20	172.80
Rean-tong เหยี่ยวทอง	2.50	21.00	26.20	47.20
Singh สิงห์	3.50	24.20	29.80	54.00
Tia-tuck-seng เตี้ยตึกเซ้ง	2.00	31.50	22.20	53.70
Tip-ros ทิพยรส	8.50	116.80	353.60	470.40
Tra-choo ตราชู	10.00	93.60	100.80	194.40
Yod ยอด	10.00	236.60	300.40	557.00
Mean	4.77	55.39	123.18	178.57
S.D.	3.42	62.12	112.38	164.84
S.E.M.	0.76	13.89	25.13	36.86



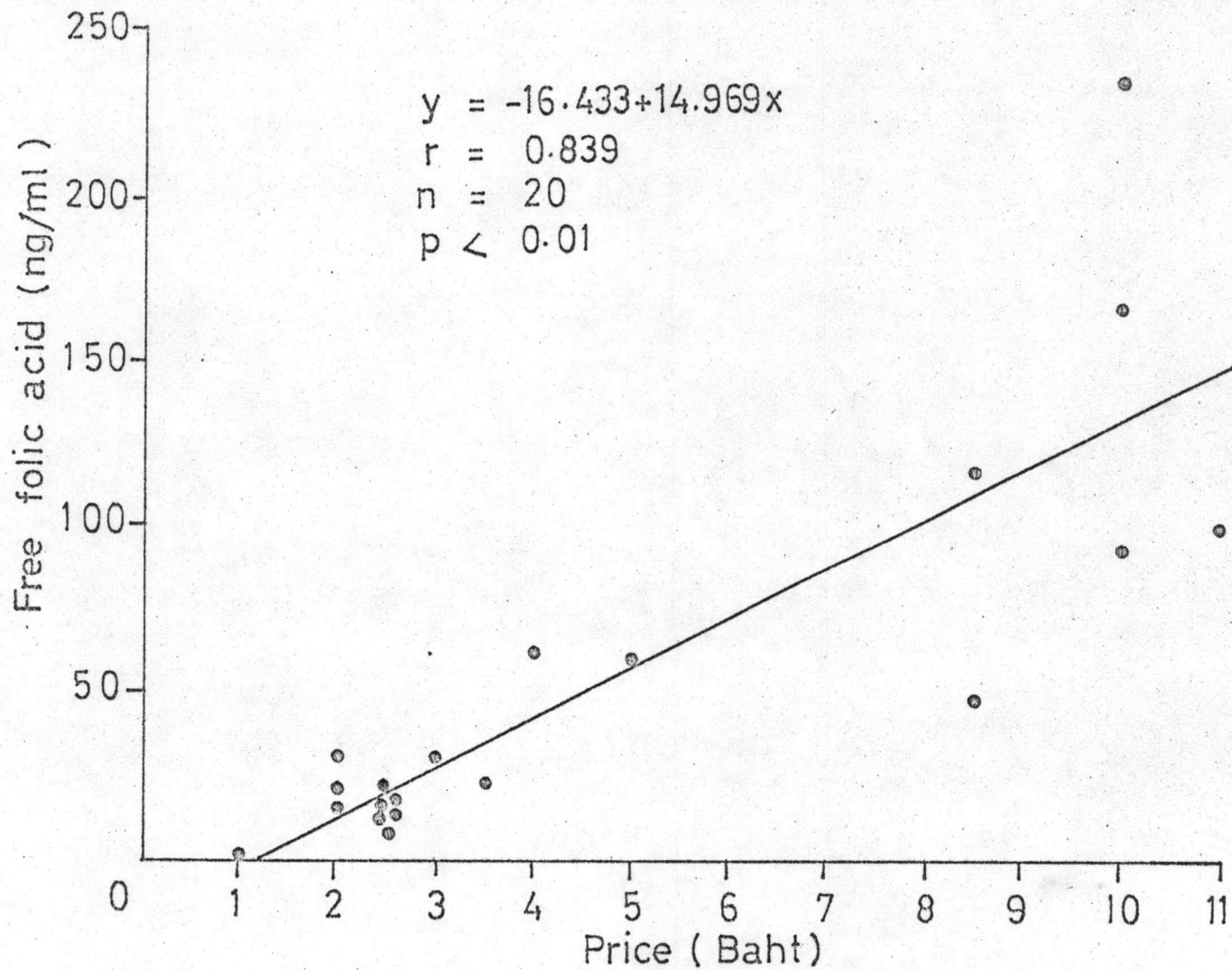


Fig.3 Relationship between free folic acid concentration in fish sauce and the price.

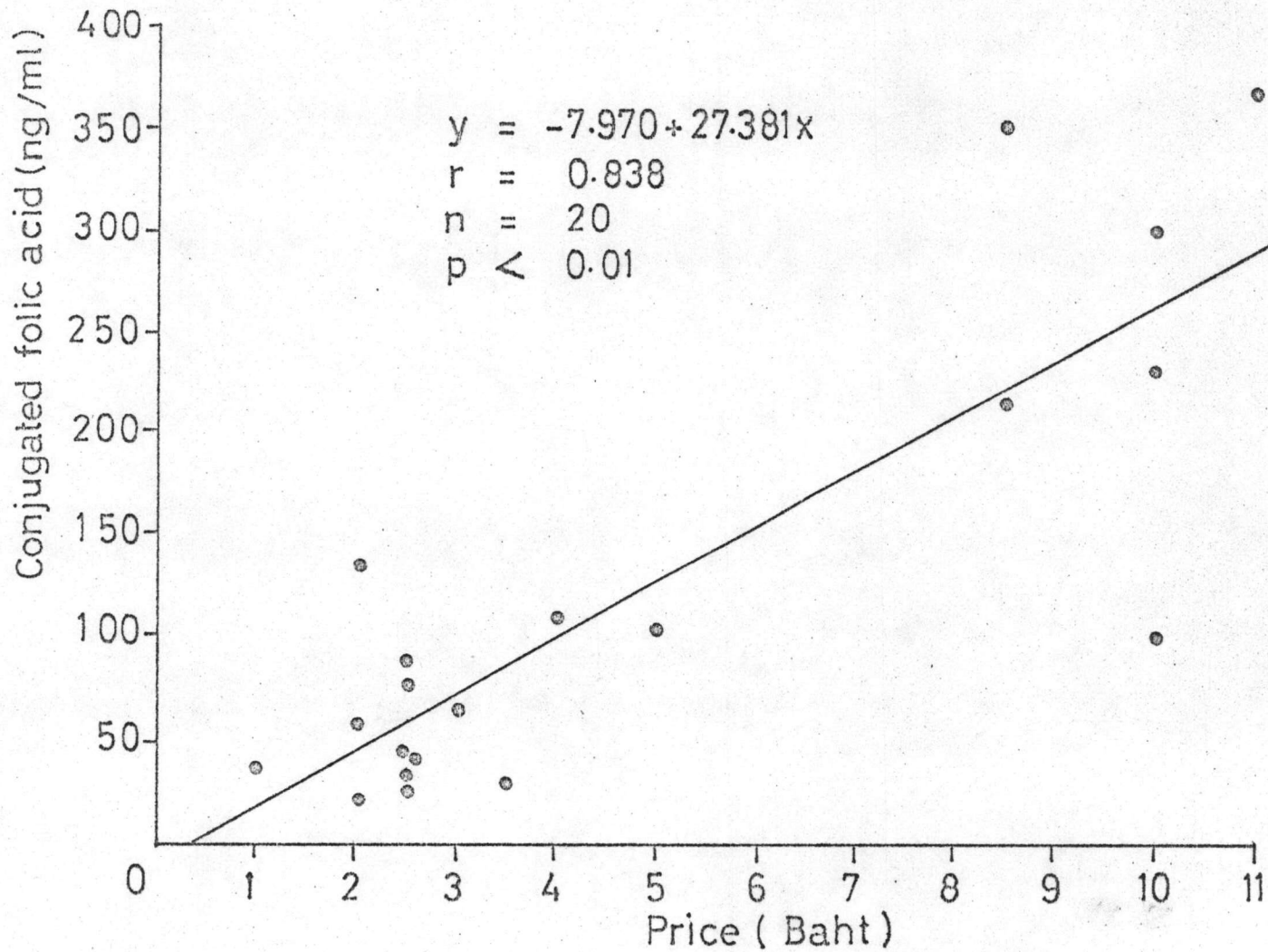


Fig. 4 Relationship between conjugated folic acid concentration in fish sauce and the price

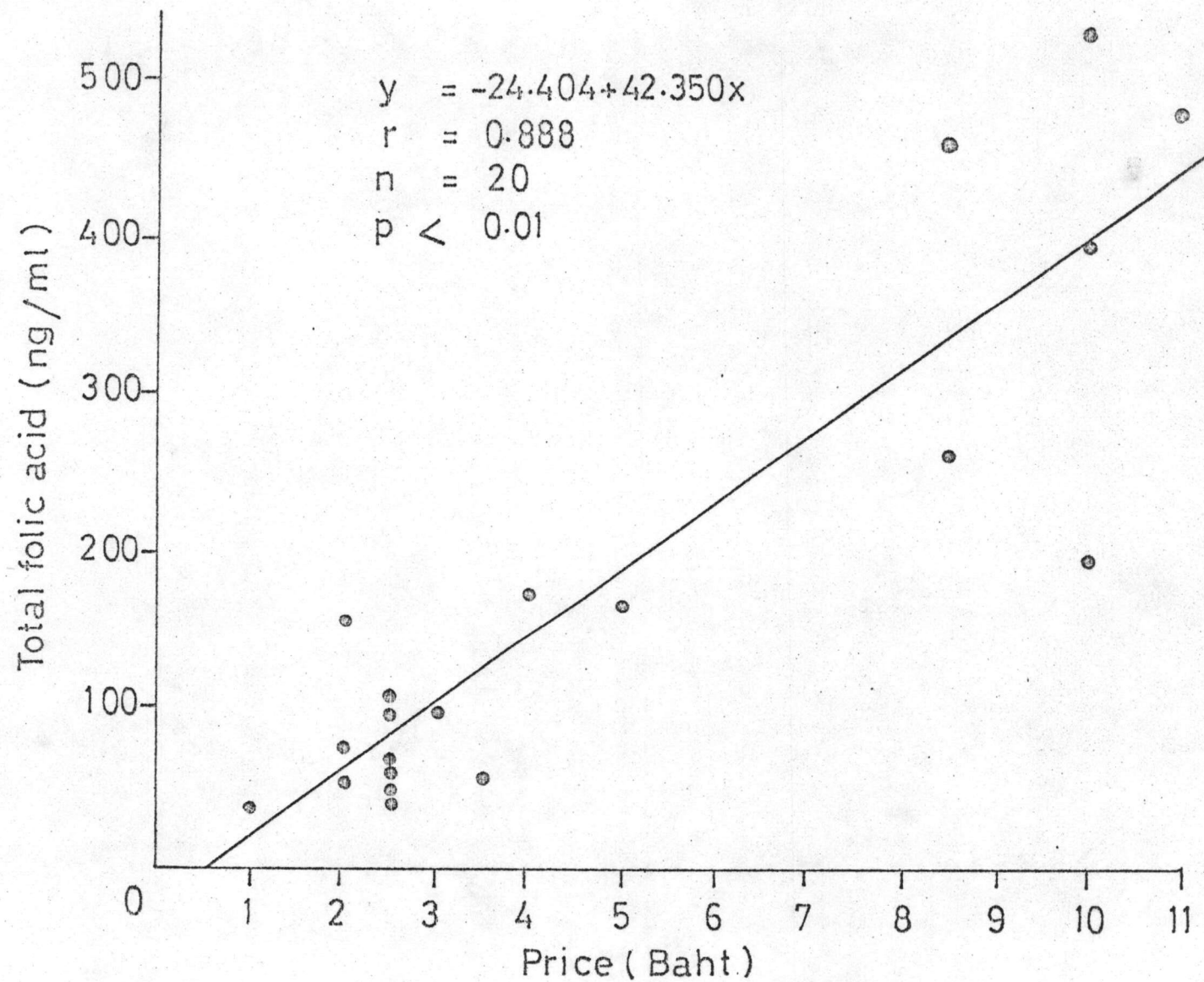


Fig.5 Relationship between total folic acid concentration in fish sauce and the price.



Results of folic acid content determined in 20 soya-bean sauce are shown in Table 4. The mean values of the free, conjugated and total folic acid contents are 89.47 ng/ml, 162.59 ng/ml and 252.06 ng/ml respectively. There was no relationship between the folic acid contents and the price of soya-bean sauce. The clear and red soya-bean sauce samples contained higher folic acid than the dark samples.

Table 4

## Folic acid content of soya-bean sauce

Commercial name	Price/720 ml Bot. (Baht)	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Dek-som-boon (red) (เด็กสมบูรณ์)	3.25	7.20	36.00	43.20
Hua-ha (red) (ฮัวฮะ)	4.00	79.80	100.20	180.00
Kai-Nguang (ไก่งวงม.ล. เจียบ)	6.00	3.60	39.60	43.20
Kai-yeab-lok (clear) (ไก่เหียบโลก)	7.00	26.40	146.40	172.80



Table 4 (continued)

Commercial name	Price/720 ml Bot. (Baht)	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Knor (dark) (คนอร์)	12.50	13.20	87.60	100.80
Kra-dars-dang (red) (กระต่ายแดง)	5.00	140.40	147.60	288.00
Mue (red) (มีอ)	3.00	221.40	124.20	345.60
Nguan-chiang (clear) (ง่วนเชียง)	7.00	40.80	175.20	216.00
Nguan-chiang (dark) (ง่วนเชียง)	6.00	1.80	82.80	84.60
Nog-in-thri (red) (นกอินทรี)	3.00	9.60	33.60	43.20
Prajan-dao-kuangtong (clear) (พระจันทร์ดาวกวางทอง)	15.00	482.40	537.60	1020.00
Prajan-dao-kuangtong (red) (พระจันทร์ดาวกวางทอง)	7.00	292.80	218.40	511.20
Poo-kao (dark) (ภูเข)	14.00	4.20	69.60	73.80

Table 4 (continued)

Commercial name	Price/720 ml Bot. (Baht)	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Rean-chai (dark) (เหรียญชัย)	2.50	4.50	31.50	36.00
Samoa-rua (clear) (สมอเรือ)	3.00	23.40	531.00	554.40
Singh-to-sam-tou (red) (สิงห์โตสามตัว)	3.00	6.60	187.80	194.40
Singh-to-tou-duew (clear) (สิงห์โตตัวเดียว)	4.00	158.40	176.40	334.80
Singh-to-tou-duew (dark) (สิงห์โตตัวเดียว)	4.00	7.80	13.80	21.60
Sue (red) (เสือ)	4.50	96.00	120.00	216.00
Tia-ha-seng (red) (เตี้ยฮะเซ็ง)	4.00	169.20	392.40	561.60
Mean	5.89	89.47	162.59	252.06
S.D.	3.73	125.60	152.90	250.45
S.E.M.	0.83	28.08	34.19	56.00

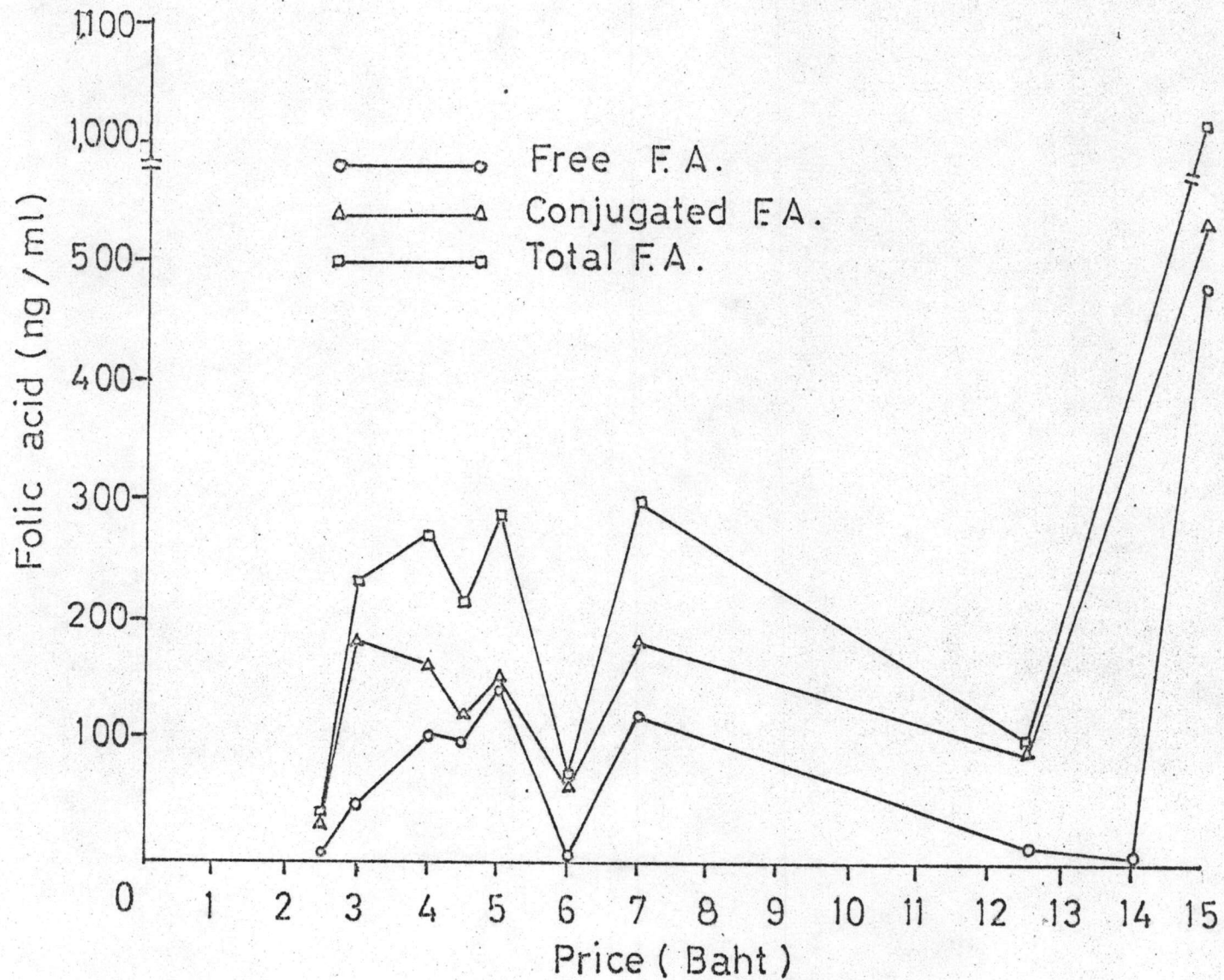


Fig.6 Relationship between folate concentration in soya bean sauce and the price.

The mean values of folic acid content in 20 samples of cow's milk were found to be free F.A. 67.06 ng/ml, conjugated F.A. 68.87 ng/ml and total F.A. 135.93 ng/ml as shown in Table 5. Mean values of folate content of human milk were free F.A. 15.17 ng/ml, conjugated F.A. 16.76 ng/ml and total F.A. 31.93 ng/ml as shown in Table 6. These findings indicated that the human milk contains lower folic acid than cow's milk.

Table 5  
Folic acid content of cow's milk

No.	Cow Strain	Age (yrs.)	Folic Acid Content (ng/ml)		
			Free F.A.	Conjugated F.A.	Total F.A.
1	Holstein Fresian	10	49.50	23.70	73.20
2	"	7	9.60	87.60	97.20
3	"	7	57.00	39.00	96.00
4	"	6	64.05	43.40	107.45
5	"	5	87.60	12.40	102.00
6	"	4	72.75	226.05	298.80
7	"	4	45.45	34.90	80.35
8	"	4	64.05	34.35	98.40
9	"	4	45.00	35.40	80.40
10	"	4	123.00	91.80	214.80



Table 5 (continued)

No.	Cow Strain	Age (yrs.)	Folic Acid Content (ng/ml)		
			Free F.A.	Conjugated F.A.	Total F.A.
11	Holstein Fresian	3	27.60	75.60	103.20
12	"	3	97.20	16.80	114.00
13	"	3	72.45	23.55	96.00
14	"	9	59.40	132.60	192.00
15	Brown Swiss	7	108.60	27.00	135.60
16	"	6	58.65	32.60	91.25
17	"	6	72.00	110.40	182.40
18	"	5	141.60	91.20	232.80
19	"	4	22.80	106.80	129.60
20	"	2	63.00	130.20	193.20
	Mean	5.15	67.06	68.87	135.93
	S.D.	2.08	32.58	53.89	61.76
	S.E.M.	0.47	7.28	12.05	13.81

Table 6  
Folic acid content of human milk

No.	Age (yrs.)	Lactation period (days)	Folic Acid Content (ng/ml)		
			Free F.A.	Conjugated F.A.	Total F.A.
1	27	5	18.60	13.50	32.10
2	19	5	17.10	15.00	32.10
3	44	4	13.88	15.82	29.70
4	18	4	9.15	13.95	23.10
5	42	3	6.90	24.00	30.90
6	19	10	27.75	9.45	37.20
7	22	4	12.52	19.28	31.80
8	21	4	6.00	22.50	28.50
9	23	6	10.95	14.55	25.50
10	23	3	8.55	18.15	26.70
11	18	5	32.85	9.15	42.00
12	29	5	9.52	10.78	20.30
13	20	4	4.72	27.38	32.10
14	19	7	5.25	15.45	20.70
15	21	6	16.20	13.50	29.70
16	30	6	8.62	24.53	33.15
17	24	5	21.60	9.90	31.50
18	16	6	37.65	13.95	51.60
19	18	8	35.33	11.77	47.10

Table 6 (continued)

No.	Age (yrs.)	Lactation period (days)	Folic Acid Content (ng/ml)		
			Free F.A.	Conjugated F.A.	Total F.A.
20	20	4	35.00	5.80	40.80
21	21	4	4.95	28.20	33.15
22	35	3	2.93	33.67	36.60
23	30	4	2.85	15.15	18.00
Mean	24.33	5.00	15.17	16.76	31.93
S.D.	7.74	1.68	11.24	6.98	8.19
S.E.M.	2.65	0.35	2.34	1.46	1.70

Table 7 shows the values of folic acid content of various samples of canned fruit juice. The mean values of the free, conjugated and total folic acid contents are 34.95 ng/ml, 30.67 ng/ml and 65.62 ng/ml respectively. There was no relationship between the folic acid content in canned fruit juice and the price as illustrated in Fig. 7. The highest content of folate is found in the tomato juice.

Table 7  
Folic acid content of canned fruit juice

Commercial name	Price Baht/ 100 ml	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Apple Juice (Addy)	2.00	1.20	2.40	3.60
Apple Squash (Sunquick)	7.25	1.50	4.50	6.00
Bireley's	0.75	-	3.00	3.00
Grape Juice (Addy)	1.75	-	4.20	4.20
Green Spot	0.80	1.98	6.90	8.80
Guava Juice (T.F. & V.)	1.50	18.60	4.20	22.80
Mango Juice (U.F.C.)	1.40	6.60	17.40	24.00
Orange Juice (Addy)	1.75	-	3.30	3.30
Orange Juice (T.F. & V.)	1.50	60.60	54.60	115.20
Papaya Juice (U.F.C.)	1.30	4.35	65.85	70.20
Pear Juice (Addy)	2.00	-	-	-
Pineapple Juice (T.F. & V.)	1.50	45.60	26.40	72.00
Pineapple Juice (U.F.C.)	2.00	55.80	14.40	70.20
Seville Orange Juice (U.F.C.)	2.25	92.40	27.60	120.00
Star gooseberry Juice	1.40	-	4.80	4.80
Tomato Juice (Ligo)	4.80	156.00	86.40	242.40
Tomato Juice (ROZA)	1.75	22.80	105.00	127.80
Tomato Juice (S. & W.)	5.00	120.00	106.80	226.80



Table 7 (continued)

Commercial name	Price Baht/ 100 ml	Folic Acid Content (ng/ml)		
		Free F.A.	Conju- gated F.A.	Total F.A.
Tomato Juice (T.F. & V.)	1.50	108.00	68.40	176.40
White Lily Orange Juice (Nodakishoji)	3.50	3.60	7.20	10.80
Mean		34.95	30.67	65.62
S.D.		48.30	36.46	78.01
S.E.M.		10.80	8.15	17.44

T.F. & V. = The Tropical Fruits and Vegetables  
Co., Ltd.

U.F.C. = Universal Food Co., Ltd.

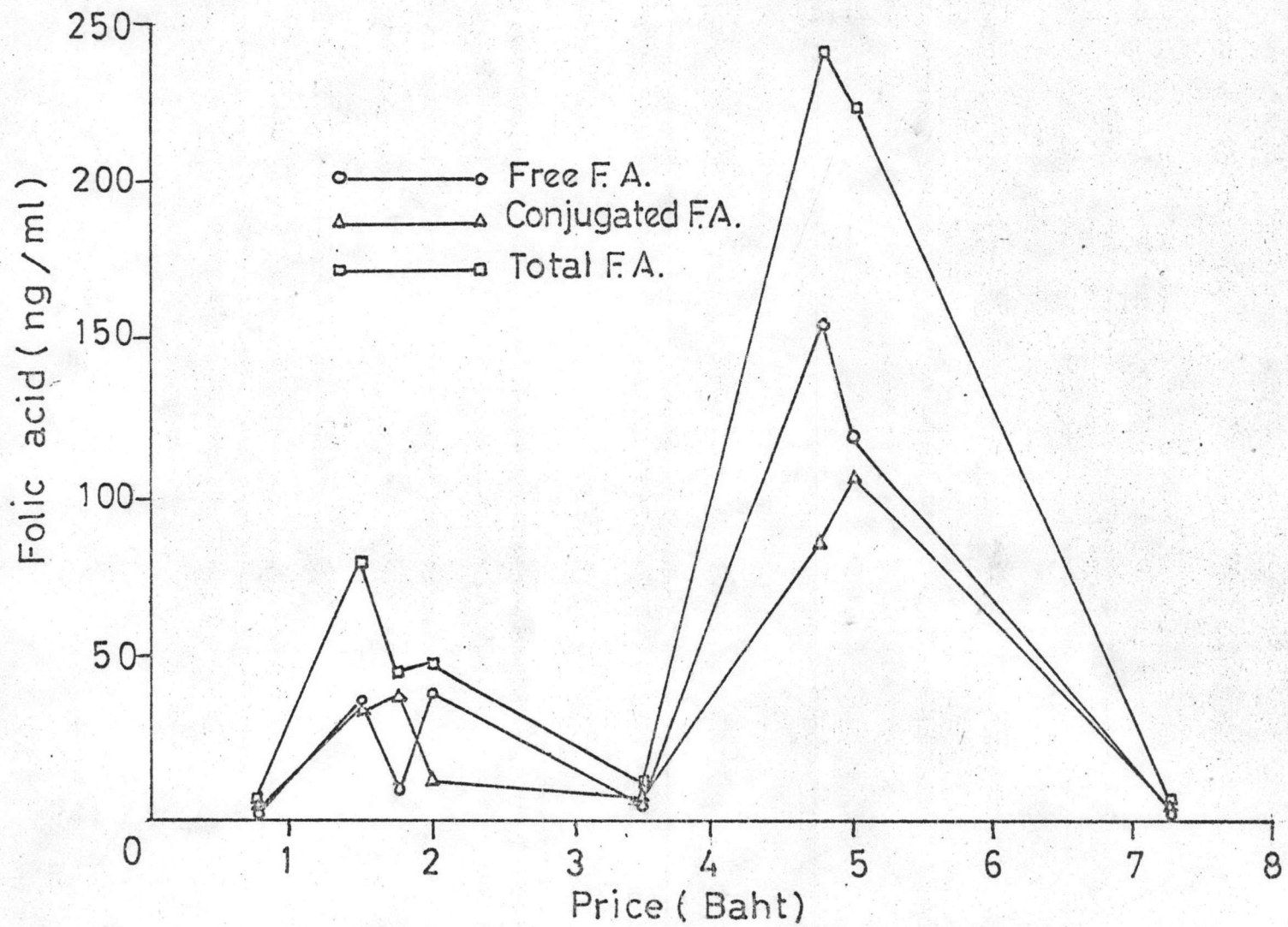


Fig.7 Relationship between folate concentration in canned fruit juice and the price.

The folic acid contents of vinegar samples are shown in Table 8. The folate contents are relatively low and show no correlation with the price.

Table 8  
Folic acid content of vinegar

Commercial name	Content Price		Folic Acid Content (ng/ml)		
	(ml)	Baht	Free F.A.	Conju- gated F.A.	Total F.A.
All grain	920	11.50	0.66	2.52	3.15
Apple ตราแอปเปิ้ล	630	2.00	0.33	3.93	4.26
Arng-sila อ่างศิลา	-	-	0.24	1.92	2.16
Fermented from Coconut milk (Lab. Microbiology, Pharmacy C.U.) ทำจากน้ำมะพร้าว	-	-	26.40	28.10	54.50
Fermented from glutenous rice intoxicating drinks (Lab. Microbiology, Pharmacy C.U.) ทำจากน้ำข้าว	-	-	0.51	6.75	7.26
Heinz (Malt Vinegar)	250	19.00	9.60	5.64	15.24

Table 8 (continued)

Commercial name	Content (ml)	Price Baht	Folic Acid Content (ng/ml)		
			Free F.A.	Conju- gated F.A.	Total F.A.
Hung-Woh หังทวอ	610	2.50	0.42	3.90	4.32
Imperial (Distilled)	729	12.00	0.93	3.33	4.26
Imperial (Wine Vinegar)	729	24.00	0.60	1.50	2.10
K.S.	700	9.50	0.24	2.52	2.76
Ma-now มะนาว	725	5.00	0.51	2.55	3.06
Mar-bin ม้าบิน	680	2.50	0.39	4.41	4.80
Nok-pi-larp นกพิลาป	625	2.00	0.18	3.96	4.14
Ooth อูฐ	625	4.00	0.27	3.33	3.60
P.F.O. อ.ส.ร.	500	6.50	0.24	2.04	2.28
Rua-bai เรือใบ	650	5.00	0.93	3.22	4.15
Ruang-kaow รวงข้าว	625	2.50	0.57	2.93	3.50
S. & W. (Apple Cider Vinegar)	473	20.00	4.02	5.94	9.96
T.P.C.	500	6.00	0.60	2.10	2.70
Winner import-export	750	6.00	4.20	3.96	8.16
Mean			2.59	4.73	7.32
S.D.			6.04	5.67	11.55
S.E.M.			1.35	1.27	2.58



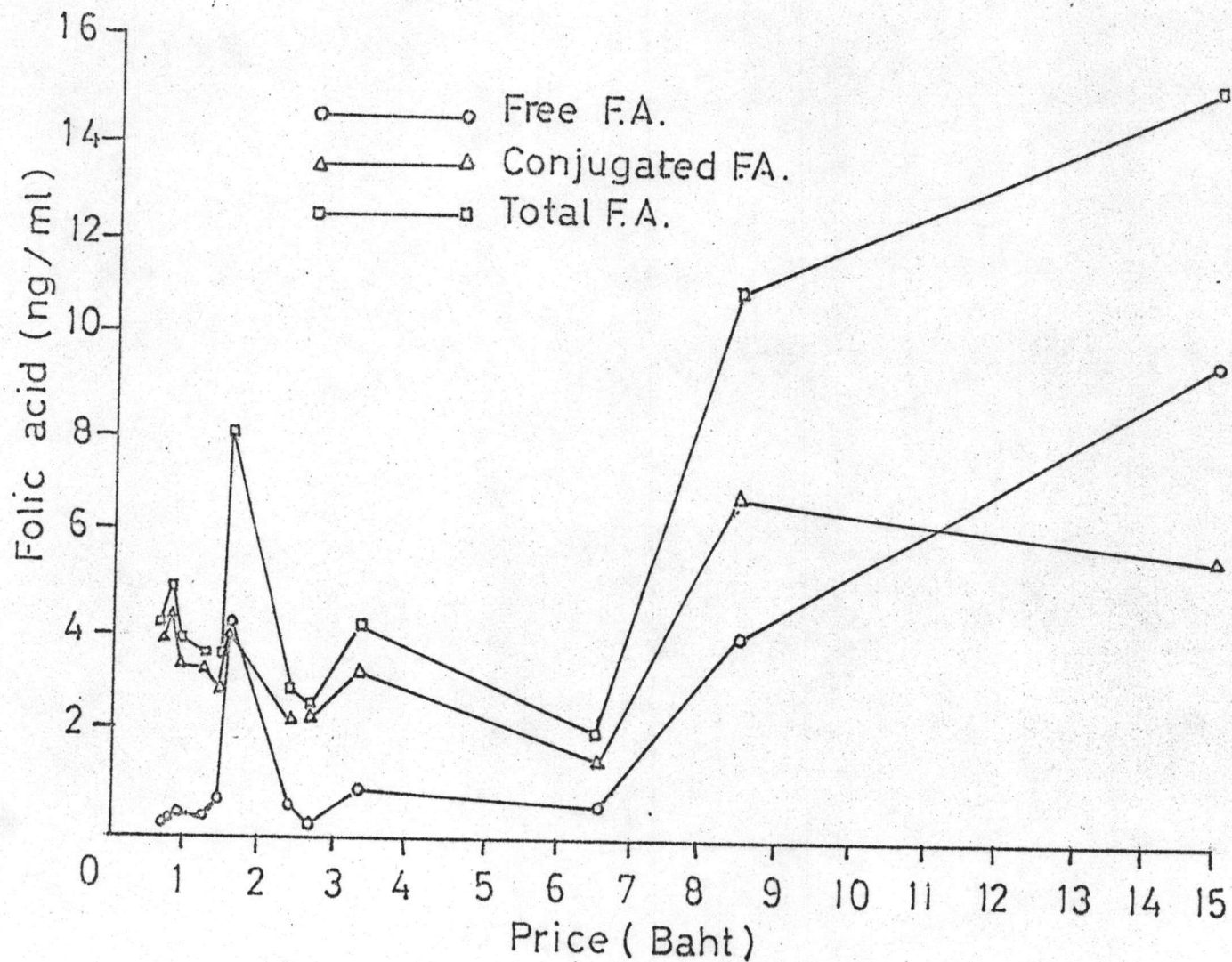


Fig. 8 Relationship between folate concentration in vinegar and the price

The free F.A., conjugated F.A. and total F.A. contents of various kinds of fruits are shown in Table 9 - 11 and the mean values in Table 12.

Table 9

## Free folic acid content of fruits

Fruit		Free Folic Acid Content (ng/g)			
		1	2	3	Average
Banana	กล้วยน้ำว้า	112.20	102.60	94.80	103.20
Banana	กล้วยหอม	114.00	114.60	118.80	115.80
Coconut milk	น้ำมะพร้าว	2.76	3.48	4.35	3.53
Grape	องุ่น	3.60	14.00	33.90	17.17
Malay apple	ชมพู่นาก	9.60	9.00	15.30	11.30
Malay apple	ชมพู่น้ำแก้ว	15.60	14.40	18.00	16.00
Mandarin orange	ส้มจีน	141.00	109.80	120.60	123.80
Papaya	มะละกอ	26.10	47.70	79.65	51.15
Pineapple	สับปะรด	15.60	9.60	12.24	12.48
Pomelo	ส้มโอ	230.25	122.40	160.80	171.15
Sapodilla	ละมุดฝรั่ง	14.85	11.70	9.00	11.85
Tangerine	ส้มเขียวหวาน	175.00	110.01	155.52	146.84
Tomato	มะเขือเทศ	213.00	206.00	201.60	206.87
Watermelon	แตงโม	31.68	44.70	46.80	41.06
Mean					73.73
S.D.					69.18
S.E.M.					18.49

Table 10  
Conjugated folic acid content of fruits

Fruit		Conjugated Folic Acid Content (ng/g)			
		1	2	3	Average
Banana	กล้วยน้ำว้า	103.80	113.40	117.60	111.60
Banana	กล้วยหอม	54.00	79.80	59.40	64.40
Coconut milk	น้ำมะพร้าว	5.28	2.40	4.83	4.35
Grape	องุ่น	25.92	16.77	42.30	28.33
Malay apple	ชมพู่นาก	196.80	189.60	176.40	187.60
Malay apple	ชมพู่แก้มหม่อม	189.60	195.00	165.60	183.40
Mandarin orange	ส้มจีน	139.50	124.30	129.60	131.10
Papaya	มะละกอ	333.90	330.75	349.65	338.10
Pineapple	สับปะรด	86.40	62.40	76.32	75.04
Pomelo	ส้มโอ	129.75	114.30	84.00	109.35
Sapodilla	ละมุดฝรั่ง	90.15	117.90	103.50	103.85
Tangerine	ส้มเขียวหวาน	107.00	44.33	106.92	86.08
Tomato	มะเขือเทศ	99.00	88.00	79.65	88.88
Watermelon	แตงโม	17.28	31.80	22.50	23.86
Mean					109.64
S.D.					84.80
S.E.M.					22.66

Table 11  
Total folic acid content of fruits

Fruit		Total Folic Acid Content (ng/g)			
		1	2	3	Average
Banana	กล้วยน้ำว้า	216.00	216.00	212.40	214.80
Banana	กล้วยหอม	168.00	194.40	178.20	180.20
Coconut milk	น้ำมะพร้าว	8.58	5.88	9.18	7.88
Grape	องุ่น	29.52	30.77	76.20	45.50
Malay apple	ชมพู่นาก	206.40	198.60	191.70	198.90
Malay apple	ชมพูแก่มีหนาม	205.20	209.40	183.60	199.40
Mandarin orange	ส้มจีน	280.50	234.00	250.20	254.90
Papaya	มะละกอ	360.00	378.45	429.30	389.25
Pineapple	สับปะรด	102.00	72.00	88.56	86.52
Pomelo	ส้มโอ	360.00	236.70	244.80	280.50
Sapodilla	ละมุดฝรั่ง	105.00	129.60	112.50	115.70
Tangerine	ส้มเขียวหวาน	282.00	154.34	262.44	232.93
Tomato	มะเขือเทศ	312.00	294.00	281.25	295.75
Watermelon	แตงโม	48.96	76.50	69.30	64.92
Mean					183.37
S.D.					107.89
S.E.M.					28.83



Table 12  
Folic acid content of fruits

Fruit		Folic Acid (ng/g)		
		Free	Conjugated	Total
Banana	กล้วยน้ำว้า	103.20	111.60	214.80
Banana	กล้วยหอม	115.80	64.40	180.20
Coconut milk	น้ำมะพร้าว	3.53	4.35	7.88
Grape	องุ่น	17.17	28.33	45.50
Malay apple	ชมพู่นาก	11.30	187.60	198.90
Malay apple	ชมพู่น้ำแกมหม่ม	16.00	183.40	199.40
Mandarin orange	ส้มจีน	123.80	131.10	254.90
Papaya	มะละกอ	51.15	338.10	389.25
Pineapple	สับปะรด	12.48	75.04	86.52
Pomelo	ส้มโอ	171.15	109.35	280.50
Sapodilla	ละมุดฝรั่ง	11.85	103.85	115.70
Tangerine	ส้มเขียวหวาน	146.84	86.08	232.93
Tomato	มะเขือเทศ	206.87	88.88	295.75
Watermelon	แตงโม	41.06	23.86	64.92
Mean		73.73	109.64	183.37
S.D.		69.18	84.80	107.89
S.E.M.		18.49	22.66	28.83

Summary of these findings in comparison with results reported previously by various authors are shown in Table 13.

Table 13

Folic acid content in various kinds of food in comparison  
with results of the other authors

Foods	Folic Acid Content (ng/g)			References
	Free	Conjugated	Total	
Fish sauce	55.39	123.18	178.57	Present study
Soya-bean sauce	89.47	162.09	251.56	Present study
Cow's milk	27.00-	20.00-	49.00-	Dong, F.M. and
	98.00	22.00	118.00	Oace, S.M. (1975)
	85.00	135.00	220.00	Hurdle et al. (1968)
	11.00	139.00	150.00	Santini et al (1962)
	65.00	67.00	132.00	Present study
Human milk	15.00	16.00	31.00	Present study
Apple Juice	2.00	-	-	Streiff, R.R. (1971)
Grape Juice	1.35	3.45	4.80	Present study
	9.50	-	-	Herbert, V. (1963)
	1.00	-	-	Streiff, R.R. (1971)
Guava Juice	-	4.20	4.20	Present study
	18.60	4.20	22.80	Present study

Table 13 (continued)

Foods	Folic Acid Content (ng/g)			References
	Free	Conjugated	Total	
Mango Juice	6.60	17.40	24.00	Present study
Orange Juice	350.00	-	-	Streiff, R.R. (1971)
	200.00	-	-	Hurdle (1967)
	39.15	23.17	62.32	Present study
Orange Juice beverage	0.99	4.95	5.94	Present study
Papaya Juice	4.35	65.85	70.20	Present study
Pear Juice	-	-	-	Present study
Pineapple Juice	50.70	20.40	71.10	Present study
Star-gooseberry Juice	-	4.80	4.80	Present study
Tomato Juice	99.00	-	-	Streiff, R.R. (1971)
	101.70	91.65	193.35	Present study
Vinegar	1.10	-	-	Herbert, V. (1963)
Banana กล้ายน้ำว้า	103.20	111.60	214.80	Present study
Banana กล้ายหอม	60.00	40.00	100.00	Toepfer <i>et al.</i> (1951)
	270.00	-	-	Hurdle (1967)
	115.80	64.40	180.20	Present study

Table 13 (continued)

Foods	Folic Acid Content (ng/g)			References
	Free	Conjugated	Total	
Coconut milk	3.53	4.35	7.88	Present study
Grape	26.00-	-	-	Toepfer <i>et al.</i> (1951)
	61.00			
	17.17	28.33	45.50	Present study
Malay apple	16.00	183.40	199.40	Present study
ชมพูแก่มีหนาม				
Malay apple ชมพูนาก	11.30	187.60	198.90	Present study
Mandarin Orange	123.80	131.10	254.90	Present study
Papaya	6.00	134.00	140.00	Santini <i>et al.</i> (1962)
	51.15	338.10	389.25	Present study
Pineapple	15.00	275.00	290.00	Santini <i>et al.</i> (1962)
	12.48	75.04	86.52	Present study
Pomelo	171.15	109.35	280.50	Present study
Sapodilla	11.85	103.85	115.70	Present study
Tangerine	69.00-	-	-	Herbert, V. (1963)
	78.00			
	146.84	86.09	232.93	Present study
Tomato	80.00	220.00	300.00	Babu, S. & Srikantia S.G. (1976)



Table 13 (continued)

Foods	Folic Acid Content (ng/g)			References
	Free	Conjugated	Total	
Tomato	180.00	-	-	Hurdle (1967)
	40.00	20.00	60.00	Toepfer <i>et al.</i> (1951)
	40.00	460.00	500.00	Santini <i>et al.</i> (1962)
	206.87	88.88	295.75	Present study
Watermelon	2.00-	-	-	Toepfer <i>et al.</i> (1951)
	8.00			
	41.06	23.86	64.92	Present study

List of English, Scientific, and Thai names  
of the fruits investigated.

English Name	Scientific Name	Thai Name
Apple	<i>Pyrus malus</i> Linn.	แอปเปิ้ล
Banana	<i>Musa sapientum</i> Linn. var.	กล้วยน้ำว้า
Banana	<i>Musa sapientum</i> Linn. var.	กล้วยหอม
Coconut	<i>Cocos nucifera</i> Linn.	มะพร้าว
Grape	<i>Vitis vinifera</i> Linn.	องุ่น
Guava	<i>Psidium guajava</i> Linn.	ฝรั่ง
Malay apple	<i>Eugenia javanica</i> Lamk. var.	ชมพู่นาก
Malay apple	<i>Eugenia javanica</i> Lamk. var.	ชมพู่น้ำแก้ว
Mandarin orange	<i>Citrus sinensis</i> Osbeck.	ส้มจีน
Mango	<i>Mangifera indica</i> Linn.	มะม่วง
Papaya	<i>Carica papaya</i> Linn.	มะละกอ
Pear	<i>Pyrus communis</i> Linn.	สาสี
Pineapple	<i>Ananas comosus</i> Merr.	สับปะรด
Sapodilla	<i>Achras sapota</i> Linn.	ละมุดฝรั่ง
Seville orange	<i>Citrus aurantium</i> Linn. var.	ส้มเกลี้ยง
Star gooseberry	<i>Phyllanthus distichus</i> Muell. Arg.	มะยม
Tangerine	<i>Citrus nobilis</i> Lour.	ส้มเขียวหวาน
Tomato	<i>Lycopersicum esculentum</i> Mill.	มะเขือเทศ
Watermelon	<i>Citrullus vulgaris</i> Schard.	แตงโม