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ภาคผนวก ก.

ตารางค่าปกติของปริมาณน้ำอสุจิ, ความหนาแน่นของตัวอสุจิ, เปอร์เซ็นต์การเคลื่อนไหวของตัวอสุจิ, ระดับความเร็วของการเคลื่อนไหว, เปอร์เซ็นต์ตัวอสุจิเป็นและ เปอร์เซ็นต์ตัวอสุจิที่มีรูปร่างปกติ ตามมาตรฐานของ WHO (1986)

Parameters	Values
Concentration	> 20×10^6 /ml
Motility	> 40% progressively motile
Morphology	> 50% normal forms
Viability	> 60% live
Agglutination	no

ภาคผนวก ข

ตารางการวิเคราะห์ความแปรปรวนแบบทางเดียว ของความเข้มข้นของตัวอสุจิที่เคลื่อนที่ได้ในน้ำ-
เพาะเลี้ยง Ham's F-10, BWB, และ TMPA.

ANOVA TABLE				
Source	df	SS	Mean Square (SS/df)	F-ratio
Among groups	2	352.58	176.29	1.15
Within group	42	6450.4	153.58	
Total	44	6802.98		

ค่า F-ratio = 1.15 ซึ่งน้อยกว่า critical value ของ $F_{.05, df_{2,42}}$ (2.99)

.. ค่า mean ของทั้ง 3 กลุ่มไม่แตกต่างกัน ($P > 0.05$)

ทดสอบโดย Least significant difference (LSD) ที่ระดับ 5% หรือ 1%

$$LSD (.01) = t_{.01} Sd = 12.65$$

$$LSD (.05) = t_{.05} Sd = 9.46$$

$$.. X_H - X_B = 21.27 - 21.53 = -0.26 \quad P > .05$$

$$X_H - X_T = 21.27 - 15.47 = 5.80 \quad P > .05$$

$$X_B - X_T = 21.53 - 15.47 = 6.06 \quad P > .05$$

ตารางการวิเคราะห์ความแปรปรวนแบบทางเดียว ของเปอร์เซ็นต์การเคลื่อนที่ของตัวอสุจิที่อบ
เลี้ยงในน้ำเพาะเลี้ยง Ham's F-10, BWB, และ TMPA เป็นเวลานาน 1 ชั่วโมง

ANOVA TABLE

Source	df	SS	Mean Square (SS/df)	F-ratio
Among groups	2	169.73	84.87	1.86
Within group	42	1913.07	45.55	
Total	44	2082.8		

ค่า F-ratio ที่ได้ = 1.86 ซึ่งน้อยกว่า critical value ของ $F_{.05, df_{2,42}}$ (2.99)

.. ค่า mean ของทั้ง 3 กลุ่มไม่แตกต่างกัน ($P > 0.05$)

ทดสอบโดย Least significant Difference (LSD) ที่ระดับ 5% หรือ 1%

$$\text{LSD} (.01) = t_{.01} Sd = 6.90$$

$$\text{LSD} (.05) = t_{.05} Sd = 5.13$$

$$\dots X_H - X_B = 88.31 - 86.80 = 1.51 \quad P > 0.05$$

$$X_H - X_T = 88.31 - 83.67 = 4.64 \quad P > 0.05$$

$$X_B - X_T = 86.80 - 83.67 = 3.13 \quad P > 0.05$$

ตารางการวิเคราะห์ความแปรปรวนแบบทางเดียว ของเปอร์เซ็นต์การเคลื่อนที่ของตัวอสุจิที่ออบ
เลี้ยงในน้ำเพาะเลี้ยง Ham's F-10, BWB, และ TMPA เป็นเวลานาน 18-20 ชั่วโมง

ANOVA TABLE

Source	df	SS	Mean Square (SS/df)	F-ratio
Among groups	2	217.37	108.67	2.47
Within group	42	1844.27	43.91	
Total	44	2061.64		

ค่า F-ratio ที่ได้ = 2.47 ซึ่งน้อยกว่า critical value ของ $F_{.05, df_{2,42}}$ (2.99)

.. ค่า mean ของทั้ง 3 กลุ่มไม่แตกต่างกัน ($P > 0.05$)

ทดสอบโดย Least significant Difference (LSD) ที่ระดับ 5% หรือ 1%

$$\text{LSD} (.01) = t_{.01} Sd = 6.76$$

$$\text{LSD} (.05) = t_{.05} Sd = 5.75$$

$$\dots X_H - X_B = 85.00 - 83.33 = 1.67 \quad P > 0.05$$

$$X_H - X_T = 85.00 - 79.73 = 5.27 \quad P > 0.05$$

$$X_B - X_T = 83.33 - 79.73 = 3.60 \quad P > 0.05$$

ตารางการวิเคราะห์ความแปรปรวนแบบทางเดียว ของอัตราการเจาะทะลุไข่แฮมสเตอร์โดยตัว
 อสุจิที่อบเลี้ยงในน้ำเพาะเลี้ยง Ham's F-10, BWW และ TMPA.

ANOVA TABLE				
Source	df	SS	Mean Square (SS/df)	F-ratio
Among groups	2	1900.33	950.17	4.84
Within group	42	8252.97	196.5	
Total	44	10153.2		

ค่า F-ratio ที่ได้ = 4.84 ซึ่งมากกว่า critical value ของ F ที่ระดับ .05
 df 2,42 = 2.99 นั่นคือ ค่า mean ของทั้ง 3 กลุ่ม ไม่เท่ากันหมดทุกค่า
 ทดสอบโดย Least significant difference (LSD) ที่ระดับ 5% หรือ 1%

$$\text{LSD (.01)} = t_{.01} Sd = 14.30$$

$$\text{LSD (.05)} = t_{.05} Sd = 10.69$$

$$\therefore X_H - X_B = 35.75 - 41.61 = -5.86 \quad P > .05$$

$$X_H - X_T = 35.75 - 25.85 = 9.9 \quad P > .05$$

$$X_B - X_T = 41.61 - 25.85 = 15.76 \quad P < .01$$

ภาคผนวก ค

ผลการวิเคราะห์น้ำอสุจิ และการทดสอบการเจาะทะลุไข่แฮมสเตอร์ของตัวอสุจิจากตัวอย่างน้ำอสุจิ
ในกลุ่มควบคุม จำนวน 15 คน

	Case number				
	1	2	3	4	5
อายุ (ปี)	36	38	30	38	20
อายุครรภ์ (สัปดาห์)	10	8	10	8	12
sexual abstinence (วัน)	3	2	3	7	2
semen volume (มล.)	0.8	2.5	1.0	4.0	2.0
sperm concentration ($\times 10^6$ /มล.)	22	21	30	104.3	67
Total sperm count ($\times 10^6$ ตัว)	17.6	52.5	30	417.2	174.2
sperm motility (%)	40	75	73	60	73.2
grade of forward motility (%)					
3	18	42.5	42.5	45	39.5
2	15	32.5	28	11	21
1	7	0	2.5	4	12.7
0	60	25	27	40	26.8
sperm viability (%)	55	79	80.6	78.6	78
normal morphology (%)	34	61	58	65	37
Penetration rate (%)	46.8	46.8	49.9	39	42
	(15/32)	(15/32)	(18/44)	(25/64)	(21/50)

ผลการวิเคราะห์น้ำอสุจิ และการทดสอบการเจาะทะลุไข่แอมส์เตอร์ของตัวอสุจิจากตัวอย่างน้ำอสุจิ
ในกลุ่มควบคุม จำนวน 15 คน (ต่อ)

	Case number				
	6	7	8	9	10
อายุ (ปี)	26	20	30	35	27
อายุครรภ์ (สัปดาห์)	12	12	8	8	12
sexual abstinence (วัน)	5	2	5	7	3
semen volume (มล.)	2.5	1.2	3.2	3.0	2.3
sperm concentration ($\times 10^6$ /มล.)	171	75	14	17	152
Total sperm count ($\times 10^6$ ตัว)	427.5	90	44.8	51	349.6
sperm motility (%)	82	59	51.4	52.4	53
grade of forward motility (%)					
3	52.7	30	0	0	31
2	16.6	19.6	35.2	33.3	13
1	12.7	9.4	16.2	19.1	9
0	18.0	41	48.6	47.6	47
sperm viability (%)	82	68	55	68	61
normal morphology (%)	51	50	44	49	50
Penetration rate (%)	60.8	68.5	43.3	20.4	28.1
	(28/46)	(24/35)	(16/45)	(11/54)	(9/32)

ผลการวิเคราะห์น้ำอสุจิ และการทดสอบการเจาะทะลุไข่แฮมสเตอร์ของตัวอสุจิจากตัวอย่างน้ำอสุจิ
ในกลุ่มควบคุม จำนวน 15 คน (ต่อ)

	Case number				
	11	12	13	14	15
อายุ (ปี)	34	35	27	37	45
อายุครรภ์ (สัปดาห์)	8	12	12	12	12
sexual abstinence (วัน)	3	7	3	4	2
semen volume (มล.)	1.5	3.5	1.3	2.2	2.3
sperm concentration ($\times 10^6$ /มล.)	16	260	15	32	61
Total sperm count ($\times 10^6$ ตัว)	24	910	19.5	70.4	140.3
sperm motility (%)	62.2	45.8	68	60	40.6
grade of forward motility (%)					
3	40.4	20.2	0	17.5	5.8
2	13.6	14.2	68	40	21.7
1	8.2	11.4	0	2.5	13.1
0	37.8	54.2	32	40	59.4
sperm viability (%)	64	47	73.5	64	42
normal morphology (%)	48	43	37	51	68
Penetration rate (%)	32	43.5	43.2	33.3	20.8
	(16/50)	(20/46)	(19/44)	(15/45)	(10/48)

ภาคผนวก ง.

ผลการตรวจวิเคราะห์น้ำอสุจิ และการทดสอบการเจาะทะลุไข่แอสเมเตอร์ของตัวอสุจิจากตัวอย่าง
น้ำอสุจิในกลุ่มศึกษา จำนวน 15 คน

	Case number				
	1	2	3	4	5
อายุ (ปี)	34	27	25	33	39
sexual abstinence (วัน)	2	5	3	5	2
semen volume (มล.)	3.4	2.0	3.0	4.2	3.8
sperm concentration ($\times 10^6$ /มล.)	37.3	19	37.6	40.6	25
Total sperm count ($\times 10^6$)	126.8	38	112.8	170.8	95
sperm motility (%)	60	65	50	61.5	62
grade of forward motility (%)					
3	14	12	8	32.3	42
2	31	36	24	15.4	20
1	15	17	18	13.8	0
0	40	35	50	38.5	34
sperm viability (%)	13	71	63.5	62.7	69
normal morphology (%)	30	67	47	30	42
Penetration rate (%)	6.2	0	18.8	8	0
	(3/48)	(0/48)	(11/55)	(2/25)	(0/46)

ผลการตรวจวิเคราะห์น้ำอสุจิ และการทดสอบการเจาะทะลุไข่แฮมสเตอร์ของตัวอสุจิจากตัวอย่าง
น้ำอสุจิในกลุ่มศึกษา จำนวน 15 คน (ต่อ)

	Case number				
	6	7	8	9	10
อายุ (ปี)	34	28	35	43	30
sexual abstinence (วัน)	10	2	7	4	5
semen volume (มล.)	5.4	4.0	6.0	3.7	3.3
sperm concentration ($\times 10^6$ /มล.)	35	33.6	30	22.7	27
Total sperm count ($\times 10^6$)	189	134.4	180	84.0	89.1
sperm motility (%)	26.5	78	40.5	53.6	66.5
grade of forward motility (%)					
3	0	46.8	71.1	0	31.5
2	20.5	18.7	13.4	42.9	25
1	6	12.6	6	10.7	10
0	73.5	22	59.5	46.4	33.4
sperm viability (%)	34	80	42.7	54.6	71
normal morphology (%)	16	48	19	35	49
Penetration rate (%)	0(0/42)	0(0/50)	5(3/59)	10(6/58)	6(3/50)

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น้ำอสุจิในกลุ่มศึกษา จำนวน 15 คน (ต่อ)

	Case number				
	11	12	13	14	15
อายุ (ปี)	30	34	31	29	40
sexual abstinence (วัน)	4	4	3	2	6
semen volume (มล.)	3.0	4.3	3.0	2.5	3.0
sperm concentration ($\times 10^6$ /มล.)	36	37	25	34.7	21
Total sperm count($\times 10^6$)	108	159.1	75	85	63
sperm motility (%)	65.1	67.5	65	70	24
grade of forward motility (%)					
3	0	47.9	18	19	0
2	43.4	12.7	30	45	16
1	21.7	6.9	17	6	8
0	34.9	32.5	35	30	76
sperm viability (%)	68	68	70	76.7	35
normal morphology (%)	43	55	41	56	34
Penetration rate (%)	18(9/50)	25(15/60)	5(3/59)	0(0/55)	0(0/50)

ประวัติผู้เขียน

นางสาวพรภิมล ตั้งชัยสิน เกิดเมื่อวันที่ 29 ตุลาคม 2503 เป็นชาวกทม. โดยกำเนิด ได้รับการศึกษาระดับปริญญาตรี จากคณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล เมื่อปีการศึกษา 2526 เริ่มรับราชการในตำแหน่งพยาบาลประจำการ ระดับ 3 ภาควิชาอายุรศาสตร์ คณะแพทย-ศาสตร์ศิริราชพยาบาล มหาวิทยาลัยมหิดล ตั้งแต่ปี 2526-2528 จึงลาออกไปเป็นพยาบาล ประจำโรงพยาบาลศูนย์ขอนแก่น จังหวัดนครพนม ตั้งแต่ปี 2528-2529 จึงลาออกเพื่อมา ศึกษาต่อจนถึงปัจจุบัน

