



ภาคผนวก ก

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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การเตรียมสาร

1. Sulfuric acid 7 N

เติมน้ำกลั่นใส่ใน volumetric flask ขนาด 2 ลิตร 750 ml. เติม Sulfuric acid 375 ml. เขย่าเบา ๆ และเติมน้ำให้ครบ 2 ลิตร (เก็บที่อุณหภูมิห้อง หรือห้องเย็น)

2. Buffer solution pH 6

ชั่งสารดังต่อไปนี้

- Citric acid monohydrate 30 g
- Sodium hydroxide 15 g
- Sodium acetate trihydrate 90 g

นำสารทั้งหมดละลายในน้ำ 500 ml. แล้วเทสารละลายที่ได้ใส่ volumetric flask ขนาด 1 ลิตร เติมด้วย 1 – propanol 290 ml. ปรับ pH ด้วยน้ำกลั่น (เก็บในขวดสีชา ได้นาน 2 เดือน)

3. Oxidant solution

ละลาย 1.41 g ของ chloramine – T – Reagent ใน buffer solution 100 ml. (เก็บที่ 4°C ในขวดสีชาได้นาน 7 วัน)

4. Color reagent

ละลาย 4 – dimethylaminobenzaldehyde 10 g ใน perchloric acid (60% wt/wt) 35 ml. (เติมซ้ำ ๆ พร้อมเขย่าเบา ๆ) เติม 2 – propanol 65 ml. (เตรียมใช้วันต่อวัน)

5. Hydroxyproline standard solution

5.1.1 Stock solution ระดับความเข้มข้น 600 $\mu\text{g/ml}$. โดยละลาย hydroxyproline 30 mg. ในน้ำกลั่น 50 ml. (เก็บใน volumetric flask ที่อุณหภูมิ 4°C ได้นาน 2 เดือน)

5.1.2 Intermediate solution ระดับความเข้มข้น 6 $\mu\text{g/ml}$. โดยปิเปต stock solution 5 ml. ใส่ใน volumetric flask ขนาด 500 ml. ปรับปริมาตรด้วยน้ำกลั่น (เตรียมวันต่อวัน)

5.1.3 Working solution โดยปิเปต intermediate solution ปริมาตร 10, 20, 30 และ 40 ml. ใส่ใน volumetric flask ขนาด 100 ml. ปรับปริมาตรด้วยน้ำกลั่นให้ครบ 100 ml. ระดับความเข้มข้น hydroxyproline จะเท่ากับ 0.6, 1.2, 1.8 และ 2.4 $\mu\text{g/ml}$. ตามลำดับ (เตรียมวันต่อวัน)

6. 0.5 M methanolic sodium hydroxide

ชั่ง sodium hydroxide 2 mg ละลายใน methanol 100 ml. และให้ความร้อนเล็กน้อยเพื่อช่วยในการละลาย

7. น้ำยา ferric acetate uranyl acetate

ละลาย $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ 0.5 g ในน้ำประมาณ 10 ml. เติมแอมโมเนียมไฮดรอกไซด์เข้มข้นลงไป 3 ml. เขย่าให้เข้ากัน จะเกิดตะกอนของ ferric hydroxide ปั่นล้างตะกอนด้วยน้ำกลั่นจนหมดความเป็นด่าง จึงนำตะกอนนี้ออกมาละลายในกรดอะซิติกเข้มข้นให้เป็น 1 ลิตร และเติม uranyl acetate ($\text{UO}_2(\text{C}_2\text{H}_3\text{O}_2) \cdot 2\text{H}_2\text{O}$) 0.1 g ลงไป เขย่าจนละลายดีแล้ว เก็บน้ำยานี้ไว้ในขวดสีน้ำตาล จะคงตัวได้นานอย่างน้อย 6 เดือน

8. Thiobarbituric acid reagent 0.288% (wt/vol.)

ชั่ง thiobarbituric acid 0.2883 mg. เติม acetic acid ที่มีความเข้มข้น 90% ลงไป อุณหภูมิเบาๆ แล้วปรับปริมาตรให้เท่ากับ 100 ml.

9. การเตรียมคอลเลสเตอรอลมาตรฐาน

9.1 stock standard โดยชั่ง pure dry cholesterol 250 mg ใส่ใน volumetric flask ขนาด 100 ml. เติม chloroform ลงไปจนถึงขีด

9.2 working standard ของคอลเลสเตอรอล โดยบีบ stock standard ปริมาตร 10.0, 15.0, 20.0, 25.0 และ 250.0 ml. ใส่ใน volumetric flask ขนาด 500 ml. แล้วเติม chloroform 40, 35, 30, 25 และ 100 ml. ระดับความเข้มข้นที่ได้เท่ากับ 0.5, 0.75, 1.0 และ 1.25 และ 2.50 mg/ml. ตามลำดับ

ตารางภาคผนวก

Appendix table 1: Analysis of variance of average daily feed intake of veal calves fed different diets on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.031	0.008	4.06*
Initial weight	1	0.077	0.077	40.56**
Total	19	0.142		

Appendix table 2: Analysis of variance of average daily feed intake of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.039	0.010	5.31**
Initial weight	1	0.070	0.070	37.54**
Total	19	0.148		

Appendix table 3: Analysis of variance of average daily feed intake of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.126	0.031	6.43**
Initial weight	1	0.086	0.086	17.54**
Total	19	0.275		

Appendix table 4: Analysis of variance of average daily feed intake of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.310	0.077	8.36**
Initial weight	1	0.222	0.222	23.94**
Total	19	0.605		

Appendix table 5: Analysis of variance of average daily feed intake of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.094	0.023	7.71**
Initial weight	1	0.106	0.106	34.88**
Total	19	0.237		

Appendix table 6: Analysis of variance of total feed intake of veal calves fed different diets on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	27.667	6.917	4.06*
Initial weight	1	69.050	69.050	40.56**
Total	19	127.684		

Appendix table 7: Analysis of variance of total feed intake of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	35.534	8.883	5.31**
Initial weight	1	62.843	62.843	37.54**
Total	19	132.856		

Appendix table 8: Analysis of variance of total feed intake of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	113.185	28.296	6.43**
Initial weight	1	77.128	77.128	17.54**
Total	19	247.665		

Appendix table 9: Analysis of variance of total feed intake of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	279.220	69.805	8.36**
Initial weight	1	199.844	199.844	23.94**
Total	19	544.535		

Appendix table 10: Analysis of variance of total feed intake of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	1355.167	338.792	7.71**
Initial weight	1	1533.585	1533.585	34.88**
Total	19	3418.037		

Appendix table 11: Analysis of variance of average daily gain of veal calves fed different diets on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.194	0.048	3.79*
Initial weight	1	0.003	0.003	0.23 ^{NS}
Total	19	0.373		

Appendix table 12: Analysis of variance of average daily gain of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.362	0.091	10.22**
Initial weight	1	0.063	0.063	7.13**
Total	19	0.469		

Appendix table 13: Analysis of variance of average daily gain of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.279	0.070	5.00**
Initial weight	1	0.038	0.038	2.72 ^{NS}
Total	19	0.482		

Appendix table 14: Analysis of variance of average daily gain of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.202	0.050	2.71 ^{NS}
Initial weight	1	0.279	0.279	15.00**
Total	19	0.661		

Appendix table 15: Analysis of variance of average daily gain of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.147	0.037	9.68**
Initial weight	1	0.053	0.053	13.94**
Total	19	0.227		

Appendix table 16: Analysis of variance of feed conversion ratio of veal calves fed different diets at on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	124.688	31.172	5.64**
Initial weight	1	0.526	0.526	0.10 ^{NS}
Total	17	195.84		

Appendix table 17: Analysis of variance of feed conversion ratio of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	167.335	41.884	3.51*
Initial weight	1	1.137	1.137	0.10 ^{NS}
Total	19	354.924		

Appendix table 18: Analysis of variance of feed conversion ratio of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	29.462	7.365	1.31 ^{NS}
Initial weight	1	0.198	0.198	0.04 ^{NS}
Total	19	108.762		

Appendix table 19: Analysis of variance of feed conversion ratio of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	1.753	0.438	0.75 ^{NS}
Initial weight	1	1.677	1.677	2.86 ^{NS}
Total	19	11.299		

Appendix table 20: Analysis of variance of feed conversion ratio of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4.628	1.157	5.42**
Initial weight	1	0.716	0.716	3.369 ^{NS}
Total	19	7.845		

Appendix table 21: Analysis of variance of feed efficiency of veal calves fed different diets on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4935.027	1233.757	4.21**
Initial weight	1	628.564	628.564	2.14 ^{NS}
Total	19	9241.1198		

Appendix table 22: Analysis of variance of feed efficiency of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	5859.105	1418.026	9.02**
Initial weight	1	241.946	241.946	1.49 ^{NS}
Total	19	8189.688		

Appendix table 23: Analysis of variance of feed efficiency of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	2973.265	743.316	3.80*
Initial weight	1	119.933	119.933	0.61 ^{NS}
Total	19	5717.469		

Appendix table 24: Analysis of variance of feed efficiency of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	857.698	214.424	0.85 ^{NS}
Initial weight	1	913.564	913.564	3.63 ^{NS}
Total	19	5110.293		

Appendix table 25: Analysis of variance of feed efficiency of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	1248.054	312.014	7.04**
Initial weight	1	127.442	127.442	2.87 ^{NS}
Total	19	1881.970		

Appendix table 26: Analysis of variance of weight gain of veal calves fed different diets on weeks 0-4 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	174.242	43.560	3.79*
Initial weight	1	2.645	2.645	0.23 ^{NS}
Total	19	335.750		

Appendix table 27: Analysis of variance of weight gain of veal calves fed different diets on weeks 4-8 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	326.565	81.641	10.22**
Initial weight	1	56.957	56.957	7.13**
Total	19	456.550		

Appendix table 28: Analysis of variance of weight gain of veal calves fed different diets on weeks 8-12 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	250.791	62.698	5.00**
Initial weight	1	34.095	34.095	2.72 ^{NS}
Total	19	433.750		

Appendix table 29: Analysis of variance of weight gain of veal calves fed different diets on weeks 12-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	181.464	45.366	2.71 ^{NS}
Initial weight	1	251.488	251.488	15.00**
Total	19	594.550		

Appendix table 30: Analysis of variance of weight gain of veal calves fed different diets on weeks 0-16 (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	2119.407	529.852	9.68**
Initial weight	1	762.752	762.752	13.94**
Total	19	3268.000		

Appendix table 31: Analysis of variance of slaughter weight of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	2106.529	526.623	3.93*
Initial weight	1	1871.641	1871.641	13.96**
Total	19	5045.752		

Appendix table 32: Analysis of variance of hot carcass weight of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	461.352	115.338	3.36*
Initial weight	1	537.579	537.579	15.64**
Total	19	1403.637		

Appendix table 33: Analysis of variance of cold carcass weight of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	617.448	154.362	4.72**
Initial weight	1	518.889	518.889	15.88**
Total	19	1387.778		

Appendix table 34: Analysis of variance of dressing percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	68.122	17.030	1.75 ^{NS}
Initial weight	1	0.939	0.939	0.10 ^{NS}
Total	19	208.453		

Appendix table 35: Analysis of variance of carcass length of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	121.794	30.448	1.83 ^{NS}
Initial weight	1	235.750	235.750	14.14**
Total	19	525.637		

Appendix table 36: Analysis of variance of loin eye area of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	61.851	15.463	2.14 ^{NS}
Initial weight	1	49.600	49.600	6.87*
Total	19	190.550		

Appendix table 37: Analysis of variance of head percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.631	0.158	1.66 ^{NS}
Initial weight	1	0.588	0.588	6.17*
Total	19	2.289		

Appendix table 38: Analysis of variance of blood percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.036	0.009	0.04 ^{NS}
Initial weight	1	1.633	1.633	7.34 ^{NS}
Total	19	4.991		

Appendix table 39: Analysis of variance of skin percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4.797	1.199	2.22 ^{NS}
Initial weight	1	0.468	0.468	0.87 ^{NS}
Total	19	12.451		

Appendix table 40: Analysis of variance of shank percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.237	0.059	0.51 ^{NS}
Initial weight	1	0.120	0.120	1.04 ^{NS}
Total	19	1.922		

Appendix table 41: Analysis of variance of heart percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4.754	1.189	0.86 ^{NS}
Initial weight	1	0.579	0.579	0.42 ^{NS}
Total	19	24.192		

Appendix table 42: Analysis of variance of lung percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.927	0.232	3.07 ^{NS}
Initial weight	1	0.581	0.581	7.68 ^{NS}
Total	19	2.660		

Appendix table 43: Analysis of variance of liver percentage of veal calves fed different diets
(adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.433	0.108	0.76 ^{NS}
Initial weight	1	0.215	0.215	1.51 ^{NS}
Total	19	2.755		

Appendix table 44: Analysis of variance of spleen percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.004	0.001	0.10 ^{NS}
Initial weight	1	0.001	0.001	0.09 ^{NS}
Total	19	0.140		

Appendix table 45: Analysis of variance of stomach percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.729	0.182	1.31 ^{NS}
Initial weight	1	0.125	0.125	0.90 ^{NS}
Total	19	3.037		

Appendix table 46: Analysis of variance of intestine percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4.122	1.031	2.17 ^{NS}
Initial weight	1	0.291	0.291	0.61 ^{NS}
Total	19	10.787		

Appendix table 47: Analysis of variance of kidney percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	5.495	1.374	2.66 ^{NS}
Initial weight	1	2.848	2.848	5.52*
Total	19	15.247		

Appendix table 48: Analysis of variance of testis percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.017	0.004	0.49 ^{NS}
Initial weight	1	0.008	0.008	0.87 ^{NS}
Total	19	0.147		

Appendix table 49: Analysis of variance of tail percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.010	0.002	0.88 ^{NS}
Initial weight	1	0.0001	0.0001	0.02 ^{NS}
Total	19	0.052		

Appendix table 50: Analysis of variance of tough percentage of veal calves fed different diets (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.049	0.012	0.45 ^{NS}
Initial weight	1	0.067	0.067	2.44 ^{NS}
Total	19			

Appendix table 51: Analysis of variance of *longissimus dorsi* percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	7.141	1.785	1.21 ^{NS}
Initial weight	1	0.008	0.008	0.01 ^{NS}
Total	19	27.859		

Appendix table 52: Analysis of variance of *psoas major* percentage of veal calves fed different diets Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	1.537	0.384	4.84**
Initial weight	1	0.589	0.589	7.42**
Total	19	2.769		

Appendix table 53: Analysis of variance of chuck percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	27.734	6.933	0.69 ^{NS}
Initial weight	1	0.060	0.060	0.01 ^{NS}
Total	19	169.037		

Appendix table 54: Analysis of variance of neck percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	15.033	3.758	1.19 ^{NS}
Initial weight	1	5.005	5.005	1.58 ^{NS}
Total	19	60.323		

Appendix table 55: Analysis of variance of brisket percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	2.887	0.722	1.47 ^{NS}
Initial weight	1	0.133	0.133	0.27 ^{NS}
Total	19	9.788		

Appendix table 56: Analysis of variance of lump percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	66.067	16.517	1.50 ^{NS}
Initial weight	1	0.116	0.116	0.01 ^{NS}
Total	19	226.139		

Appendix table 57: Analysis of variance of fore shank percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	9.114	2.279	1.29 ^{NS}
Initial weight	1	0.404	0.404	0.23 ^{NS}
Total	19	37.408		

Appendix table 58: Analysis of variance of flank percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	14.369	3.592	1.82 ^{NS}
Initial weight	1	5.568	5.568	2.83 ^{NS}
Total	19	45.032		

Appendix table 59: Analysis of variance of trim meat percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	11.020	2.755	3.36*
Initial weight	1	5.441	5.441	6.64*
Total	19	23.966		

Appendix table 60: Analysis of variance of total lean meat percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	127.638	31.909	0.78 ^{NS}
Initial weight	1	7.731	7.731	0.19 ^{NS}
Total	19	698.554		

Appendix table 61: Analysis of variance of fat percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	9.118	2.274	2.99 ^{NS}
Initial weight	1	4.386	4.386	5.75*
Total	19	21.014		

Appendix table 62: Analysis of variance of bone percentage of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	130.689	32.672	0.92 ^{NS}
Initial weight	1	43.403	43.403	1.22 ^{NS}
Total	19	641.968		

Appendix table 63: Analysis of variance of muscle percentage of 12th dissection of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	316.883	79.221	2.54 ^{NS}
Initial weight	1	30.715	30.715	0.98 ^{NS}
Total	19	755.449		

Appendix table 64: Analysis of variance of fat percentage of 12th dissection of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	144.727	36.182	2.01 ^{NS}
Initial weight	1	13.839	13.839	0.77 ^{NS}
Total	19	396.808		

Appendix table 65: Analysis of variance of bone percentage of 12th dissection of veal calves fed different diets in Thai style cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	250.965	62.741	1.91 ^{NS}
Initial weight	1	3.320	3.320	0.10 ^{NS}
Total	19	714.446		

Appendix table 66: Analysis of variance of short loin percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	0.369	0.092	0.35 ^{NS}
Initial weight	1	0.465	0.465	1.77 ^{NS}
Total	19	4.678		

Appendix table 67: Analysis of variance of chuck percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	45.442	11.361	0.94 ^{NS}
Initial weight	1	0.322	0.322	0.03 ^{NS}
Total	19	223.711		

Appendix table 68: Analysis of variance of rack percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	4.377	1.094	1.36 ^{NS}
Initial weight	1	1.386	1.386	1.72 ^{NS}
Total	19	17.046		

Appendix table 69: Analysis of variance of long leg percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	17.440	4.360	0.49 ^{NS}
Initial weight	1	0.521	0.521	0.06 ^{NS}
Total	19	143.523		

Appendix table 70: Analysis of variance of shank percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	57.470	14.368	2.46 ^{NS}
Initial weight	1	3.334	3.334	0.57 ^{NS}
Total	19	141.113		

Appendix table 71: Analysis of variance of breast percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	15.290	3.882	1.95 ^{NS}
Initial weight	1	1.343	1.343	0.68 ^{NS}
Total	19	45.531		

Appendix table 72: Analysis of variance of flank percentage of veal calves fed different diets in standard cutting (adjusted)

SOV	DF	SS	MS	F-value
Treatment	4	2.552	0.638	2.66 ^{NS}
Initial weight	1	2.413	2.413	10.08**
Total	19	6.986		

Appendix table 73: Analysis of variance of pH at 45 min of *longissimus dorsi* of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.140	0.035	1.57 ^{NS}
Error	15	0.336	0.022	
Total	19	0.477		

Appendix table 74: Analysis of variance of pH at 24 h of *longissimus dorsi* of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.388	0.097	2.31 ^{NS}
Error	15	0.630	0.042	
Total	19	1.018		

Appendix table 75: Analysis of variance of pH at 45 min of semimembranosus of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.089	0.022	0.48 ^{NS}
Error	15	0.693	0.046	
Total	19	0.782		

Appendix table 76: Analysis of variance of pH at 24 h of semimembranosus of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.072	0.018	1.77 ^{NS}
Error	15	0.153	0.010	
Total	19	0.225		

Appendix table 77: Analysis of variance of EC at 45 min of *longissimus dorsi* of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.215	0.054	2.85 ^{NS}
Error	15	0.283	0.019	
Total	19	0.499		

Appendix table 78: Analysis of variance of EC at 24 h of *longissimus dorsi* of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.525	0.131	1.65 ^{NS}
Error	15	1.197	0.080	
Total	19	1.722		

Appendix table 79: Analysis of variance of EC at 45 min of semimembranosus of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.571	0.143	3.74*
Error	15	0.572	0.038	
Total	19	1.144		

Appendix table 80: Analysis of variance of EC at 24 h of semimembranosus of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.14	0.004	0.05 ^{NS}
Error	15	0.986	0.066	
Total	19	1.001		

Appendix table 81: Analysis of variance of L* of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	18.864	4.716	1.14 ^{NS}
Error	55	227.350	4.134	
Total	59	246.214		

Appendix table 82: Analysis of variance of a* of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	6.152	1.538	1.76 ^{NS}
Error	55	47.947	0.872	
Total	59	54.099		

Appendix table 83: Analysis of variance of b* of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	7.318	1.830	1.51 ^{NS}
Error	55	66.603	1.211	
Total	59	73.921		

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Appendix table 84: Analysis of variance of dry matter percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	2.994	0.749	1.30 ^{NS}
Error	35	20.133	0.575	
Total	39	23.127		

Appendix table 85: Analysis of variance of moisture percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	2.994	0.749	1.30 ^{NS}
Error	35	20.133	0.575	
Total	39	23.127		

Appendix table 86: Analysis of variance of protein percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	3.718	0.930	1.37 ^{NS}
Error	35	23.823	0.681	
Total	39	27.542		

Appendix table 87: Analysis of variance of fat percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.101	0.0258	1.37 ^{NS}
Error	35	0.646	0.018	
Total	39	0.748		

Appendix table 88: Analysis of variance of drip loss percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	1.902	0.476	0.88 ^{NS}
Error	15	8.079	0.538	
Total	19	9.981		

Appendix table 89: Analysis of variance of thawing loss percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	21.695	5.424	1.35 ^{NS}
Error	15	60.049	4.003	
Total	19	81.744		

Appendix table 90: Analysis of variance of boiling loss percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	11.846	2.961	0.67 ^{NS}
Error	15	66.599	4.4399	
Total	19	78.445		

Appendix table 91: Analysis of variance of grilling loss percentage of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	311.594	77.898	1.51 ^{NS}
Error	15	771.326	51.422	
Total	19	1082.920		

Appendix table 92: Analysis of variance of tenderness score of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	16.033	4.008	2.14 ^{NS}
Error	115	215.167	1.871	
Total	119			

Appendix table 93: Analysis of variance of flavour score of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	15.550	3.887	1.81 ^{NS}
Error	115	246.417	2.1427	
Total	119	261.967		

Appendix table 94: Analysis of variance of juice score of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	13.533	3.383	1.68 ^{NS}
Error	115	232.167	2.019	
Total	119	245.700		

Appendix table 95: Analysis of variance of overall acceptability score of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	12.867	3.217	1.94 ^{NS}
Error	115	190.833	1.6594	
Total	119	203.700		

Appendix table 96: Analysis of variance of shear force of loin of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.118	0.030	1.19 ^{NS}
Error	90	2.214	0.024	
Total	94	2.331		

Appendix table 97: Analysis of variance of cholesterol content of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	8791.095	2197.774	2.24 ^{NS}
Error	35	34321.501	980.614	
Total	39	43112.596		

Appendix table 98: Analysis of variance of TBA values of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	1.811	0.453	5.40**
Error	35	2.933	0.084	
Total	39	4.744		

Appendix table 99: Analysis of variance of triglyceride content of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	6.988	1.747	2.19 ^{NS}
Error	35	27.977	0.799	
Total	39	34.965		

Appendix table 100: Analysis of variance of myristic acid (C14:0) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	142.191	35.548	16.82**
Error	35	73.965	2.113	
Total	39	216.156		

Appendix table 101: Analysis of variance of palmitic acid (C16:0) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	404.039	101.010	10.71**
Error	35	330.109	9.432	
Total	39	734.148		

Appendix table 102: Analysis of variance of palmitoleic acid (C16:1) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	3.678	0.920	1.46 ^{NS}
Error	35	22.081	0.6309	
Total	39	25.759		

Appendix table 103: Analysis of variance of stearic acid (C18:0) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	21.377	5.344	0.34 ^{NS}
Error	35	556.249	15.893	
Total	39	577.626		

Appendix table 104: Analysis of variance of oleic acid (C18:1) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	463.597	115.899	4.55**
Error	35	891.496	25.471	
Total	39	25.471		

Appendix table 105: Analysis of variance of linoleic acid (C18:2) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	224.067	56.012	2.52 ^{NS}
Error	35	777.678	22.219	
Total	39	1001.724		

Appendix table 106: Analysis of variance of linolenic acid (C18:3) percentage of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	22.829	5.707	1.57 ^{NS}
Error	35	127.053	3.630	
Total	39	149.882		

Appendix table 107: Analysis of variance of unsaturated to saturated fatty acid (FAR) of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	4.965	1.241	7.36**
Error	35	5.902	0.1686	
Total	39	10.867		

Appendix table 108: Analysis of variance of ratio of stearic acid / linoleic acid of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	0.018	0.004	0.16 ^{NS}
Error	35	1.003	0.029	
Total	39	1.023		

Appendix table 109: Analysis of variance of ratio of polyenic acid to saturated fatty acid of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	1.722	0.431	6.90**
Error	35	2.183	0.062	
Total	39	3.906		

Appendix table 110: Analysis of variance of ratio calculate without considering stearic acid of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	4.5631	1.141	9.53**
Error	35	4.191	0.120	
Total	39	8.755		

Appendix table 111: Analysis of variance of double bonds index = double bonds per 100 fatty acids of meat of veal calves fed different diets

SOV	DF	SS	MS	F-value
Treatment	4	594.487	148.622	6.63**
Error	35	784.125	22.403	
Total	39	1378.612		

ประวัติผู้เขียน

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นางสาวธนธิป วิใจ

วัน เดือน ปีเกิด

5 สิงหาคม 2521

ประวัติการศึกษา

สำเร็จการศึกษาระดับมัธยมต้นและปลายจาก โรงเรียน
สรรพวิทยาคม อำเภอแม่สอด จังหวัดตาก พ.ศ.2540
สำเร็จการศึกษาระดับปริญญาตรี วิทยาศาสตร์บัณฑิต
(วท.บ.) สาขาสัตวศาสตร์ คณะเกษตรศาสตร์
มหาวิทยาลัยเชียงใหม่ พ.ศ.2544
เข้าศึกษาระดับปริญญาโทตั้งแต่ปี พ.ศ. 2544-2547

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