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 315 dorsi muscle in Holstein steers

Item	20 mo.	21 mo.	22 mo.	23 mo.	24 mo.	SEM <sup>1)</sup>	P-value <sup>2)</sup>
Moisture, %	66.74	66.51	66.64	66.92	67.59	0.86	0.4482
Crude fat, %	11.34	11.76	10.86	11.53	10.78	0.94	0.1865
Crude protein, %	20.06	20.01	20.80	20.24	20.91	0.36	0.2159
CIE value <sup>3)</sup>							
L <sup>3)</sup>	38.02 <sup>ab</sup>	41.33 <sup>a</sup>	38.66 <sup>ab</sup>	40.27 <sup>ab</sup>	36.74 <sup>b</sup>	1.10	0.0890
a <sup>3)</sup>	19.86	21.01	20.42	21.03	21.88	0.78	0.4947
b <sup>3)</sup>	8.19 <sup>b</sup>	9.82 <sup>a</sup>	8.96 <sup>ab</sup>	9.78 <sup>a</sup>	9.18 <sup>ab</sup>	0.47	0.1431
chroma	21.49	23.20	22.31	23.21	23.73	0.89	0.4674
hue	22.21 <sup>b</sup>	25.03 <sup>a</sup>	23.63 <sup>ab</sup>	24.79 <sup>a</sup>	22.58 <sup>b</sup>	0.50	0.0013
Cooking loss	30.81	31.11	31.59	30.39	31.85	0.21	0.2316

316 <sup>1)</sup> Standard error of the mean.

317 <sup>2)</sup> Probability of the F test.

318 <sup>3)</sup> L=lightness, a=redness, b=yellowness.

319 <sup>a, b</sup> Means in the same row with different superscripts are significantly (P<0.05) different.

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322 Table 8. Effect of fattening period on fatty acid of longissimus dorsi muscle in Holstein steers

Fatty acid, %	20 mo.	21mo.	22 mo.	23 mo.	24 mo.	SEM <sup>1)</sup>	P-value <sup>2)</sup>
C <sub>14:0</sub>	3.47	3.38	3.47	3.14	3.03	0.16	0.2565
C <sub>14:1</sub>	1.19	0.98	1.14	0.90	0.89	0.12	0.4083
C <sub>15:0</sub>	0.31	0.30	0.31	0.29	0.29	0.02	0.9401
C <sub>15:1</sub>	0.08	0.06	0.07	0.07	0.07	0.01	0.7391
C <sub>16:0</sub>	28.07	28.12	26.13	28.29	25.98	1.09	0.4300
C <sub>16:1</sub>	4.70	4.32	5.07	4.34	4.47	0.26	0.3257
C <sub>17:0</sub>	0.74	0.72	0.85	0.72	0.82	0.07	0.5274
C <sub>17:1</sub>	0.08	0.08	0.08	0.08	0.08	0.01	0.8293
C <sub>18:0</sub>	11.11	11.89	11.87	11.10	11.44	0.67	0.8547
C <sub>18:1</sub>	47.39	47.25	48.07	48.00	49.29	0.81	0.4365
C <sub>18:2</sub>	2.661 <sup>ab</sup>	2.47 <sup>b</sup>	2.57 <sup>ab</sup>	2.79 <sup>ab</sup>	3.22 <sup>a</sup>	0.22	0.1745
C <sub>18:3</sub>	0.05 <sup>b</sup>	0.05 <sup>b</sup>	0.09 <sup>a</sup>	0.04 <sup>b</sup>	0.06 <sup>ab</sup>	0.01	0.1571
C <sub>20:0</sub>	0.09	0.11	0.12	0.11	0.12	0.02	0.7967
C <sub>20:3</sub>	0.05	0.13	0.13	0.08	0.13	0.03	0.4735
C <sub>20:4</sub>	0.05	0.21	0.25	0.15	0.17	0.06	0.2893
SFA <sup>3)</sup>	43.78	44.49	42.74	43.65	41.67	1.02	0.3842
MUFA <sup>4)</sup>	53.43	52.70	54.43	53.38	54.81	0.92	0.5157
UFA <sup>5)</sup>	56.22	55.51	57.26	56.35	58.33	1.02	0.3842
M/S <sup>6)</sup>	1.23	1.19	1.28	1.23	1.32	0.05	0.4226
U/S <sup>7)</sup>	1.29	1.25	1.35	1.29	1.41	0.06	0.3888

323 <sup>1)</sup> Standard error of the mean.

324 <sup>2)</sup> Probability of the F test, <sup>3)</sup> Saturated fatty acid.

325 <sup>4)</sup> Monounsaturated fatty acid.

326 <sup>5)</sup> Unsaturated fatty acid.

327 <sup>6)</sup> Monounsaturated fatty acid/Saturated fatty acid.

328 <sup>7)</sup> Unsaturated fatty acid/Saturated fatty acid.

329 <sup>a, b</sup> Means in the same row with different superscripts are significantly (P<0.05) different.

330 Table 9. Effect of fattening period on performance on profits in Holstein steers

Item	20 mo.	21mo.	22 mo.	23 mo.	24 mo.
	—— won / head ——				
Income(A)					
Carcass sales <sup>1)</sup>	3,857,152	3,844,466	3,875,604	3,996,319	3,871,994
Total income	3,857,152	3,844,466	3,875,604	3,996,319	3,871,994
Operating cost(B)					
Calves	1,025,000	1,025,000	1,025,000	1,025,000	1,025,000
Concentrate <sup>2)</sup>	1,003,010	1,082,864	1,118,962	1,189,761	1,244,074
Rice straw <sup>3)</sup>	189,285	200,535	213,123	223,230	242,982
Other cost <sup>4)</sup>	266,500	287,000	307,500	328,000	348,500
Total cost	2,483,795	2,595,399	2,664,585	2,765,460	2,860,556
Profit(A-B)	1,373,357	1,249,067	1,231,015	1,230,859	1,011,438

331 <sup>1)</sup> Carcass price, won/kg

332 (A1+=12,005, B1+=11,300, C1+=10,820, A1=10,930, B1=9,975, C1=9,200,

333 A2=9,350, B2=9,072, C2=8,182, A3=7,930, B3=7,775, C3=7,122)

334 <sup>2)</sup> Concentrated price, won/kg(Fattening : 249.7won/kg, Finishing : 238.0won/kg)335 <sup>3)</sup> Rice straw price: 300.0won/kg336 <sup>4)</sup> Hired labor, bedding materials, electricity, transport, water service and veterinary medicine.