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論文名稱:	探討蘭嶼豬與畜試迷彩豬於不同屠宰體重之生長、屠體、血液性狀及脂質生成酵素之比較
論文名稱(外文):	Comparison of Growth Performance, Carcass Characteristics, Blood Lipids and Activities of Lipogenic Enzymes Between Lanyu and Mitase Pigs at Different Slaughter Weight
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中文摘要:	<p>本試驗之目的為探討蘭嶼豬 (Lanyu pig) 及畜試迷彩豬 (Mitase pig) 於不同屠宰體重時，兩者之生長、屠體、血液性狀及脂質生成相關酵素之差別。並將蘭嶼豬及畜試迷彩豬與市售 LYD 【(Landrace ♀ × Yorkshire ♂) ♀ × Duroc ♂ , LYD 】 豬隻相較，三者之血液性狀及脂質生成相關酵素之活性。</p> <p>試驗採用平均體重 20 kg 之蘭嶼豬 12 頭及畜試迷彩豬 10 頭，餵予玉米-大豆粕為主之基礎飼糧，採任飼及飲水充分供應，豬隻飼養至 30、40 及 50 kg 三種不同屠宰體重，當豬隻達預定屠宰體重時，屠宰以供測定屠體性狀。並將蘭嶼豬及畜試迷彩豬達預定屠宰體重後，與市售 LYD 三品種豬隻 (平均體重 115 kg) 相較，血液及皮下脂肪組織 (Subcutaneous adipose tissue) 之脂質生成相關酵素之活性。</p>

結果顯示，蘭嶼豬之平均日增重及飼料效率較畜試迷彩豬者少且差（ $P < 0.01$ ）。隨屠宰體重增加，兩品種豬隻之屠體重、屠體長、屠宰率、背脂厚度及腰眼面積皆隨屠宰體重增加而分別增重、增長、提高、增厚及增大（ $P < 0.01$ ）；屠體分切後之腹脇肉（Belly）、前腿肉（Shoulder）、後腿肉（Ham）、大里肌（Longissimus dorsi muscle）及小里肌（Tenderloin）重量亦皆隨屠宰體重上升而增重。試驗結束時血液中三酸甘油酯（Triglyceride, TG）含量蘭嶼豬及畜試迷彩豬兩品種品種間相似（11.67 vs. 11.43 mg/dL; $P > 0.05$ ）；膽固醇（cholesterol）以畜試迷彩豬顯著較高（73.07 vs. 77.34 mg/dL; $P < 0.05$ ）。蘭嶼豬之脂蛋白比例以 HDL% 顯著較高；畜試迷彩豬之脂蛋白比例以 LDL% 較高。蘭嶼豬及畜試迷彩豬大里肌中之飽和脂肪酸（saturated fatty acid, SFA）及脂肪飽和度（SFA/（MUFA + PUFA）, S/U）以蘭嶼豬顯著較高（44.06% vs. 43.22%；0.78% vs. 0.77%, $P < 0.05$ ）。蘭嶼豬及畜試迷彩豬各階段屠宰與 LYD 相較，LYD 具最低之飽和度。

脂質生成酵素中之乙醯輔酶 A 羧化酶（acetyl-CoA carboxylase; EC 6.4.1.2, ACC）、脂肪酸合成酶（fatty acid synthetase, FAS）及葡萄糖 6 磷酸去氫酶（glucose-6-phosphate dehydrogenase; EC 1.1.1.49, G-6-PDH）以蘭嶼豬顯著較高。蘭嶼豬及畜試迷彩豬各階段屠宰與 LYD 相較，G-6-PDH 及 NADH-蘋果酸去氫酶（NADH-malate dehydrogenase; EC 1.1.1.40, MDH）之活性當蘭嶼豬及畜試迷彩豬於 50 kg 屠宰時，其活性最高。

綜上所述，畜試迷彩豬之生長速率較蘭嶼豬快、飼料效率較佳，且腰眼面積及背最長肌重量亦均較蘭嶼豬大且重。LYD 豬隻與蘭嶼豬及畜試迷彩豬相較，LYD 大里肌中具最低之飽和度。蘭嶼豬於體重 30-50 kg 時，脂質生成酵素活性較強，顯示蘭嶼豬之脂質蓄積量及合成能力分別較畜試迷彩豬及 LYD 大及強。

外文摘要: The aim of this study was to investigate the influence of growth performance, carcass characteristics, blood lipids, fatty acid composition and activities of lipogenic enzymes of subcutaneous fat tissue between Lanyu and Mitase pigs at different slaughter weight (SW), and both of the two breeds were compared with LYD [(Landrace ♀ × Yorkshire ♂) ♀ × Duroc ♂, LYD] of blood lipids and activities of lipogenic enzymes.

A total of 12 Lanyu and 10 Mitase pigs were used, and freely access to feed and water in this experiment. Animals were measured carcass characteristics when slaughtered at 30, 40 and 50 kg.

The Mitase average daily gain and feed conversion rate better than Lanyu pigs. Carcass weight (kg), carcass length (cm), dressing percentage (%), backfat thickness (mm) and loin area (cm²) were increased ($P < 0.01$), and the carcass cut weight of belly, shoulder, ham, longissimus dorsi muscle and tenderloin were increased when Lanyu and Mitase pigs increased on SW. The blood lipid

triglyceride (TG) had not different on Lanyu and Mitase pigs, and cholesterol of Mitase pigs had significantly higher at final experiment than Lanyu pigs. The blood of HDL% were higher in Lanyu then Mitase pigs. The blood of LDL% were higher on Mitase pigs.

The saturated fatty acid and lipid saturate index of longissimus dorsi muscle were higher on Lanyu pigs. Compared with Lanyu, Mitase and LYD pigs, LYD on lipid saturate index was lowest.

The activities of acetyl-CoA carboxylase, fatty acid sythetase and glucose-6-phosphate dehydrogenase were higher in Lanyu then Mitase pigs. Compared with Lanyu, Mitase and LYD pigs, the activities of glucose-6-phosphate dehydrogenase and NADH-malate dehydrogenase, when Lanyu pigs slaughtered at 50 kilograms was the highest, and LYD was the lowest.

In conclusion, the average daily gain and feed conversion rate of Mitase had significantly higher then Lanyu pigs, and loin area had wided and the carcass cut weight of longissimus dorsi muscle had heavy. The lipogenic enzyme activities were higher when Lanyu pigs slaughtered at 30-50 kilograms. The result indicated that Lanyu pigs accumulated more fat easily than Mitase and LYD pigs.