

36. 無線射頻辨識系統於豬隻辨識之應用

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本試驗旨在評估應用無線射頻辨識 (radio frequency identification, RFID) 晶片，以植入方式標識豬隻身分，對豬隻生長性能、植入部位生物安全性，及是否造成部位肉損害。選取畜試黑豬一號豬隻 24 頭，分為 3 種身分辨識方式組，每組(欄)各 4 頭，公母各 2 頭。A 組及 B 組均在豬隻 5 日齡時於左耳根部植入 AN-II 型式之 RFID 晶片，A 組在體重 30 kg 時，於背線兩側 6 個部位額外植入 ISO 型式之 RFID 晶片，對照組(C 組)則採耳刻辨識。豬隻飼養至體重 110 kg 時屠宰。結果顯示，不論 5 日齡或體重 30 kg 時將晶片植入豬隻各部位，均不影響豬隻生長性能，屠宰後取出之晶片均可正確讀取晶片號碼，晶片及植入部位肉均無損壞情形，屠宰過程亦未造成晶片之破損。採集晶片周圍組織進行切片及顯微照相判定結果，C 組各部位肉均屬正常，而 A 組及 B 組有部分部位肉顯現有異物侵入之徵兆，惟未發現部位肉受損之證據。

關鍵語：晶片、豬、無線射頻辨識系統

APPLICATION OF RADIO FREQUENCY IDENTIFICATION INTO PIGS AS AN IDENTIFYING METHOD

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The purpose of this study was applying radio frequency identification (RFID) chips in pigs to evaluate the identification, the effect of the chips on growth performance, the bio-security of meat around chips implanted area, and the evidence of damage of the meat. A total of twenty-four Taiwan Black Pig No.1 pigs, half barrows and gilts, were assigned into three groups at five days old. The pigs of groups A and B were implanted with AN-II RFID chips in the base part of left ear. The pigs in Group A were further implanted with ISO RFID chips in six parts beside the back line when body weight reached at 30 kg. The pigs identified by ear-notch were control group (C group). The feeding trial was terminated when body weight of pigs reached at 110 kg. Results showed that RFID chips did not affect the growth performance of pigs. The recalled chips and meat around implanted area kept intact after pigs were slaughtered. The chip did not shift markedly and damage during slaughter. The series number could be read immediately after chips were recalled. The tissue around chips was collected for biopsies and analyzed by micrography. Every part of meat from group C was normal while some parts of meat from group A and B had been found surrounded by connect tissue. However, no evidence of damage of the meat had been found.

Key Words: Chip, Pig, Radio frequency identification

37. 不同生長階段肉豬糞尿排泄量之調查

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本研究旨在調查生長肥育期肉豬使用之飼糧、採食量及其糞尿排泄量之相關性。試驗採用體重 30 kg (BW 30 組)、50 kg (BW 50 組) 及 100 kg (BW 100 組) 之 LYD 三品種雜交肉豬各 8 頭。豬隻置於代謝架上適應 3 天後，每天收集尿液 1 次，每天上、下午各收集糞便 1 次，連續收集 3 天，糞尿收集後立即測量尿液容積及秤取糞便重量並紀錄，儲存於 4°C 冷藏庫俟全部採集後，將全部的糞、尿樣品分別予以混合、取樣，並進行後續分析。結果顯示，BW 100 組的飼糧採食量及排糞量均較其他三組為多 ($P < 0.05$)，而尿液量顯著地較 BW 30 組為多，並有較 BW 50 組為多的趨勢。肉豬之新鮮豬糞和烘乾豬糞重量間有相關 ($r = 0.91$)，新鮮豬糞和飼糧採食量 ($r = 0.80$)，及烘乾豬糞和乾物質採食量 ($r = 0.85$) 間均呈極顯著 ($P < 0.001$) 正相關。綜合上述，肉豬糞便排泄量受到飼糧採食量之影響，而飼糧採食量、排糞量及尿液量均隨著試驗動物之體重增加而增多。

關鍵語：糞尿排泄量、飼糧採食量、肉豬

INVESTIGATION OF FECES AND URINE EXCRETION OF PIGS AT DIFFERENT GROWING STAGE

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The purpose of this study was to investigate the correlation of diets, feed intake and feces and urine excretion of growing-finishing pigs. A total of 24 LYD pigs were assigned into three groups with eight pigs in each group according to their body weight (BW), i.e. 30 kg (BW-30), 50 kg (BW-50) and 100 kg (BW-100). Pigs were fed individually in metabolism crate for 3d adaptation. From day 4 to 6, total feces and urine were collected and recorded separately twice a day. Fecal and urine samples were stored at 4°C in refrigerator. All the sample feces and urine of individual pig were thawed, pooled and sampled for analysis. The results showed that the pigs of BW-100 group had larger ($P < 0.05$) feed intake and fecal excretion than other groups, and excreted more ($P < 0.05$) urine than the BW-30 group. There were significant ($P < 0.001$) correlation between wet and dry feces ($r = 0.91$), wet feces and feed intake ($r = 0.80$), and dry feces and dry matter intake ($r = 0.85$). In summary, the feed intake had high correlation with the feces excretion of pig. The feed intake, the excretion of feces and urine increased with the increase of BW for pigs.

Key Words: Feces and urine excretion, Feed intake, Pig