BODY CONDITION SCORE (BCS), BODY MEASUREMENT, AND CARCASS CHARACTERISTIC OF BEEF CATTLE IN JOHOR BARAT

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CERTIFICATION

This project entitled "Body Condition Score (BCS), Body Measurement, and Carcass Characteristic Of Beef Cattle In Johor Barat" is prepared by Mohammad Noranin Naim Bin Sahroni and submitted to the faculty of agriculture in fulfilment of the requirements of the course SHW 4999 (final year project) for the award of degree in bachelor of agriculture (Animal Science).

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ABSTRACT

A study was conducted to evaluate body condition score (BCS), body weight (BW), body measurements (BMs) and carcass characteristic of cattle under the small holder production system. This study used Kedah-Kelantan (KK), Brahman, cross breed and imported cattle by the farmer at Pontian Johor. The objectives of the study were to examine the quality of beef cattle related to breed type, slaughter weight and feeding management and to relate the body condition in relationship to body condition score (BCS), body weight (BW), body measurements (BMs) and carcass measurements of beef cattle from the small holder production system. A total of 31 cattle were evaluated under the small holder feedlot system. Body weight (BW), body condition score (BCS), digital photograph, body measurements (BMs), pre-slaughter weight, carcass weight, dressing percentage, marbling score, rib eye fat colour and the meat colour score were collected during the study. Four parameters of BMs collected during the study are the width of hindquarters (WQ), length of body (LB), tailhead to the hock (TH), and heart girth (HG). Others observations were made during the study such as management of the farm, feed management, and farm layout. A total of 31 cattle with a range of BCS 3 to 5 were evaluated in this study. The results in percentage are at BCS 3 (32.3%), BCS 4 (51.6%), and BCS 5 (16.1%). The highest BW of the cattle was 420 kg and the lowest BW was 135 kg, respectively. The BW highly correlated with the BCS (R^2=0.828). Regression analysis between BMs and BCS of the cattle showed that LB, HG, and WQ were highly correlated at indicated by the R^2 value of 0.809, 0.811, and 0.816, respectively. No BCS 1, BCS2 which is at the poor score was observed in this study and no BCS 7, BCS 8, BCS 9 which

extremely fat/obese. Thus, this indicates that cattle that reared under small holder feedlot system can be reared as long as they are properly managed and provided with sufficient feed.

ABSTRAK

Satu kajian telah dijalankan untuk menilai skor keadaan badan (BCS), berat badan (BW), ukuran badan (BMS) dan ciri-ciri karkas lembu di bawah sistem pengeluar ternakan kecil-kecilan. Kajian ini menggunakan Kedah-Kelantan (KK), Brahman, baka campuran dan lembu yang diimport oleh petani di Pontian Johor. Objektif kajian ini adalah untuk mengkaji kualiti lembu pedaging berkait dengan jenis baka, berat badan dan pengurusan makan dan untuk mengaitkan keadaan badan dalam hubungan dengan keadaan badan skor (BCS), berat badan (BW), ukuran badan (BMS) dan ukuran karkas lembu daging lembu dari sistem pengeluaran pemegang kecil. Sebanyak 31 ekor lembu telah dinilai di bawah sistem fidlot pemegang kecil. Berat badan (BW), keadaan badan skor (BCS), gambar digital, ukuran badan (BMS), berat pra-penyembelihan, berat karkas, peratusan karkas, lemak, tulang rusuk mata, warna lemak dan skor warna daging dikumpulkan semasa kajian . Empat parameter BMS dikumpul semasa kajian ini adalah lebar punggung (WQ), panjang badan (LB), hujung ekor hingga ke lutut (TH), dan lilitan dada (HG). Lain-lain pemerhatian yang dibuat dalam kajian ini seperti pengurusan ladang, pengurusan makanan, dan susun atur ladang. Sebanyak 31 ekor lembu dengan pelbagai BCS 3-5 telah dinilai dalam kajian ini. Keputusan dalam peratusan berada di BCS 3 (32.3%), BCS 4 (51.6%), dan BCS 5 (16.1%). BW tertinggi lembu adalah 420 kg dan BW terendah adalah 135 kg, masing-masing. BW berkait rapat dengan BCS (R^2 = 0,828). Analisis regresi antara BMS dan BCS lembu menunjukkan bahawa LB, HG, dan WQ telah berkait rapat di ditunjukkan oleh nilai R2 daripada 0,809, 0,811 dan 0,816 masing-masing. Tiada BCS 1, BCS2 iaitu pada skor lemah diperhatikan dalam kajian ini dan tiada BCS 7, BCS 8,

BCS 9 yang sangat lemak/gemuk. Oleh itu, ini menunjukkan bahawa lembu yang diternak di bawah kecil sistem pemegang fidlot boleh diternak selagi mereka mengurus dan bekalkan dengan makanan yang mencukupi.

CHAPTER 1

INTRODUCTION

1.1 Background

Malaysia livestock industry is an important and one of the fundamental industries in the country's agricultural development. It provides lucrative employment, supplies the domestic requirements of meat, milk and dairy products to the population. The development of the industry will ensure the food security in the county and reduces dependency on meat imports. In 2013, the livestock sector accounts about 12.4% of the total agricultural gross domestic product (GDP) (Shanmugavelu, 2014).

Livestock industry in Malaysia compromises of ruminants and non-ruminants. Currently, the ruminant sector which consists of beef and dairy cattle, daisy buffaloes, sheep and goats are still raised in small-scale (Mohamed, 2007). Malaysia imports most of the need of beef, mutton, and dairy products from abroad especially India, Australia and New Zealand to cater for the shortage. In 2014, the levels of self sufficiency (SSL) for beef, mutton, and milk were 24.84%, 13.10% and 12.93% respectively (DVS, 2005-2014). The lag in this ruminant sector is normally associated with several factors such as the lack of land resources, high feed price, cheaper import substitutes, poor private-sector involvement (Shanmugavelu, 2014), disease prevention and control (Mohamed, 2007), and lack of quality breeds, expertise and workforce (National agro-food Policy 2011-2020).

This research is going to be standardizing the quality of beef cattle at smallholder level by undergoing observe and record the body weight (BW), body measurement (BM), body condition score (BCS) digital photo, carcass information, and classification of breed type. The grading system will be based on quantitative and qualitative method. The qualitative is by doing observation of body condition score (BCS) of beef cattle. While quantitative is by measuring body measurement (BM) and body weight (BWT) of beef cattle (Khan. H *et al*,. 2003)

Body condition score (BCS) can be used as grading for beef cattle to grade cattle into different group depends on body condition. BCS is a useful management tool for distinguishing differences in nutritional needs of beef cattle in the herd. This system uses a numeric score to estimate body energy reserve in the cattle. BCS in beef cattle ranges from 1 (extremely emaciated) to 9 (extremely fat) as developed by Richard, (2007). Body condition can be evaluated easily by visual appraisal while driving or walking through a herd.

1.2 Objective

1. To examine the quality of beef cattle related to breed type, slaughter weight and feeding management.
2. To relate the body condition in relationship to BCS, body weight, body measurements and carcass measurements of beef cattle from the small holder production system.

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