



UNIVERSITI PUTRA MALAYSIA

***THE COSTS OF REARING A BUFFALO CALF FROM BIRTH UNTIL
WEANING AGE AT BUFFALO BREEDING AND RESEARCH
CENTRE, TELUPID, SABAH***

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WEANING AGE AT BUFFALO BREEDING AND RESEARCH CENTRE,
TELUPID, SABAH**

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It is hereby **certified** that we have read this project paper entitled “The Costs Of Rearing A Buffalo Calf From Birth Until Weaning Age At Buffalo Breeding And Research Centre, Telupid, Sabah” by Muhammad Hasifsafwan Bin Ishak and in our opinion it is satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the course VPD4901 – **Project**

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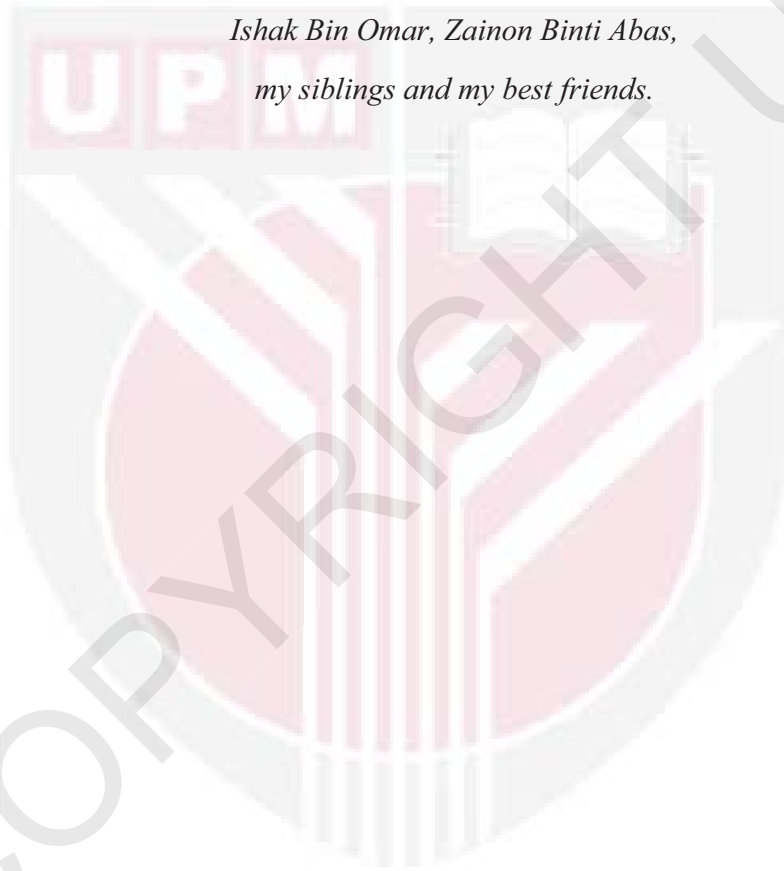
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Dedicated to my parents,

*Ishak Bin Omar, Zainon Binti Abas,
my siblings and my best friends.*



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ABSTRACT

An abstract of the project paper presented to the Faculty of Veterinary Medicine in partial fulfillment of the course VPD 4901-Project

THE COST OF REARING A BUFFALO CALF FROM BIRTH UNTIL WEANING AGE AT BUFFALO BREEDING AND RESEARCH CENTRE FARM, TELUPID SABAH

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Malaysia recently witnessed declining of its buffalo population at the rate of 1.2% per year which could be due to the lack of suitable land for extensive farming, lack of superior breeds, reproductive problems for example a low reproductive rate and poor calf rearing management. Calf rearing is important because it is the future replacement of the herd. Farmers may faces problem on maintaining farm sustainability probably because of they are not aware of rearing cost in the farm. Therefore, the objective of this study is to calculate the costs of rearing a buffalo calf from birth until weaning age.

The calculation of costs were done in Microsoft Excel (Microsoft Corporation, Redmond, WA). A buffalo farm (Buffalo Breeding and Research Centre Farm) at Telupid Sabah was visited by a veterinary student in January, 2016 to gather inputs for this study. Inputs were collected by using a questionnaire (asked to farm manager) and by using farm records in 2015. The inputs gathered were farm general and health management and costs component such as healthcare costs, labor costs and treatment costs.

The results of this study showed, on the extensive farm in 2015, there were 143 buffalo breeder and there were 133 buffalo calves born. The most common calf diseases in year 2015 were weight loss (15 cases), diarrhea (17 cases) and respiratory (3 cases). The age of weaning is three months. Calf management from birth until weaning was as followed; at birth, buffalo calf was identified with a tag and dewormed. The calf remained with their dam in the paddock until weaning and were given 0.5kg pellet per calf 3 weeks before weaning age. At weaning age, the calf was dewormed for second time. The calf was assumed not to eat grass before weaning age. The costs of rearing a calf only calculated the variable costs. The costs included feed costs (milk cost, pellet), id-tag, preventive treatment costs, labor costs (to feed calf). The cost of milk is calculated based on the current price of buffalo milk in the market (RM3.20). The cost of milk cost was calculated by taking the milk requirement per body weight for 90 consecutive days. This, taking account of the average daily gain of calf in the farm which is 0.6kg. Therefore, the costs of milk from birth until weaning is RM1,834.56.

The costs of pellet, id tag and preventive treatment were RM1.14 per kg, RM2 per animal and RM0.50 per animal, respectively. The cost of rearing a buffalo calf from birth until weaning was RM1842.46. The highest cost was the feed costs (99.85%), in which milk cost contributed 99.57% to overall cost of feed cost. Using costs of diarrhea, weight loss and respiratory RM30.16, RM30.16 and RM1.46 per animal respectively, the total costs of treating the sick calves were RM969.44 per herd per year. This means, the costs of rearing buffalo calves were RM246,016.77 per herd per year, where treatment costs is 0.39% of the total rearing costs per herd per year.

This study revealed that the cost of rearing a calf is expensive due to milk cost that is the contributed to major contributor to the overall cost. The disease treatment only contributed 0.39% to the total cost of rearing per herd per year, however, the high prevalence of diseases could cause the farm to have high treatment costs. Hence, farmer needs to improve the herd health to reduce the overall total cost of rearing. The cost from milk cost can be reduce by reduce the age of weaning. However further research need to be done in future for the acceptable weaning age in the farm.

Keywords *distribution cost, Rearing Buffalo Calf*

ABSTRAK

Abstrak kerja projek ini dikemukakan kepada Fakulti Perubatan Veterinar dalam memenuhi kursus VPD 4910-Projek

KOS MEMELIHARA SEEKOR ANAK KERBAU DARI LAHIR SEHINGGA UMUR CERAI SUSU DI PUSAT TERNAKAN DAN PENYELIDIKAN KERBAU, TELUPID, SABAH

Oleh

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Malaysia baru-baru ini menyaksikan perubahan yang luar biasa daripada populasi kerbau yang semakin berkurangan pada kadar 1.2% setiap tahun kerana kekurangan tanah yang sesuai untuk penternakan, kekurangan baka, masalah pembiakan dikaitkan dengan kadar pembiakan yang rendah, mudah mendapat penyakit endemik dan kadar ekstraksi yang tinggi . Oleh yang demikian,kebanyakan penternak menghadapi masalah dalam menghasilkan keuntungan dan perolehan dalam penternakan disebabkan kurangnya pemahaman tentang taburan kos dalam menternak. Banyak input dalam usaha mengembangkan, mengekalkan dan menggantikan kelompok kerbau, namun kurangnya pemahaman mengenai perbelanjaan akan menjejaskan bukan sahaja taburan kos dalam

menternak anak kerbau dari lahir sehingga umur cerai susu, namun potensi ladang dalam potensi produksi dan kelansungan jangka panjang.

Sebuah ladang ternakan kerbau (Pusat ternakan dan penyelidikan Kerbau Telupid Sabah) telah dijadikan lokasi untuk kajian ini oleh seorang pelajar jurusan Veterinar pada Januari 2016, untuk mengumpul data bagi kajian ini. Data-data yang dikumpul menggunakan buku soalan (yang ditanya pada Pengurus ladang) dan menggunakan rekod ladang pada tahun 2015. Data-data yang dikumpul adalah dari pengurusan kesihatan am ladang termasuk komponen kos seperti kos penjagaan kesihatan, kos makanan, kos kandang, dan kos buruh. Pengiraan kos telah menggunakan Microsoft Excel (Microsoft Corporation, Redmond, WA).

Keputusan kajian mendapati, di ladang ekstensif tersebut pada tahun 2015, sebanyak 143 induk kerbau dan 133 anak kerbau yang telah lahir. Masalah biasa yang dihadapi oleh anak kerbau adalah masalah penurunan berat badan (15 kes), cirit-birit (17 kes) dan pernafasan (3 kes). Umur cerai susu anak kerbau adalah pada umur 3 bulan. Pengurusan anak kerbau dari lahir hingga cerai susu adalah seperti berikut; anak kerbau akan di tag dan diberi ubat cacing. Anak kerbau akan bersama ibu di dalam kandang sehingga cerai susu. Sebanyak 0.5kg palet akan diberikan 3 kali seminggu sebelum cerai susu. Kemudian, anak kerbau akan sekali lagi diberikan ubat cacing sebelum di cerai susu. Semua anak kerbau telah di anggap tidak memakan rumput sebelum umur cerai susu di dalam kajian ini. Kos menternak anak kerbau hanya mengambil kos manipulasi (berubah-ubah).

Kos yang terlibat adalah kos makanan (susu, palet), tag id, kos rawatan pencegahan, kos buruh. Kos susu dikira mengikut harga terkini susu kebau dipasaran (RM3.20). Kos susu di kira berdasarkan dengan mengambil faktor keperluan susu oleh anak kerbau dalam sehari untuk 90 hari. Kiraan ini juga mengambil kira purata kenaikan berat badan anak kerbau di ladang tersebut iaitu 0.6kg. Maka, kos susu dari lahir hingga cerai susu adalah RM1,834.56. Kos makanan palet, tag id, dan rawatan pencegahan masing-masing adalah RM1.14 per kg, RM2 per ekor, dan RM0.50 per ekor. Seterusnya, kos untuk menternak seekor anak kerbau dari lahir hingga umur cerai susu adalah RM1,824.46. Kos tertinggi datang daripada kos makanan (99.85%). Seterusnya, dengan menggunakan kos rawatan penyakit seperti cirit birit, penurunan berat badan, dan pernafasan dengan jumlah masing-masing adalah RM30.16, RM30.16, dan RM1.46 bagi setiap ekor anak kerbau, maka kos rawatan penyakit adalah RM969.44 bagi kelompok untuk setahun. Maka, jumlah untuk menternak anak kerbau bagi tahun 2015 adalah RM246,016.77 bagi kelompok kerbau. Kos rawatan menyumbang kepada 0.39% kepada jumlah kos bagi kelompok untuk setahun.

Kajian ini mendapati kos menternak seekor anak kerbau adalah mahal oleh kerana kewujudan kos susu yang mana merupakan penyumbang utama kepada kos keseluruhan. Walaupun kos rawatan penyakit adalah rendah (0.39) kepada jumlah keseluruhan kos membela bagi kelompok kerbau, tetapi jika jumlah ternakan yang sakit meningkat akan menyebabkan kenaikan kos rawatan di dalam ladang. Kos susu dapat dikurangkan dengan mengurangkan umur cerai susu. Walaubagaimanapun, kajian selanjutnya perlu dijalankan bagi mengetahui umur yang sesuai jika cerai susu ingin di ciptakan.

Kata kunci taburan kos, Memelihara Anak Kerbau

CHAPTER 1

INTRODUCTION

This chapter begins with the presentation of background of the study on the costs of rearing a buffalo calf from birth until weaning age at Buffalo Breeding and Research Centre, Telupid, Sabah. Next, statement of the problem is discussed and the objectives and hypothesis of the research are stated. This chapter continues with the discussion on the significant of the study. This chapter ends with the presentation of the research limitation and chapter summary.

1.1 BACKGROUND OF STUDY

Buffalo have been use by the people in Sabah to assist them in farming. This can be seen in the oil palm farm which they use buffalo to carry the palm fruit. The other main function of buffalo in Sabah is to supply meat which similar to cattle meat in peninsular Malaysia. The increase in demand of buffalo meat is usually because of the culture and religion's celebration and festival such as Hari Raya Korban and Aqiqah. The KadazanTatani culture also uses buffalo as present from man to women in their wedding and engagement ceremony. Malaysia however, facing an issue which declining of buffalo meat at the rate of 1.2% per year (M. Wan Zahari, 2009). This issue is raised up because of several factors which affect buffalo production. According to Jainudeen and Wan Zahari in 2009, the factors were lack of superior breeds and reproductive problems

for example a low reproductive rate and poor calf rearing management. Poor calf rearing management is very concerning because the future breeder come from the calf rearing. The reared calves will become the replacement of female and male breeder in the farm. However the problem and importance of calf rearing is often overlooked by farmers. One of the problem that farmers often overlooked is the cost of rearing buffalo calf which eventually affecting their future breeder performance in the farm.

1.2 PROBLEM STATEMENT AND RESEARCH QUESTION

The lack of scientific study on costs of rearing buffalo calf and lack awareness on the costs in their farm causing calf rearing to become overlooked. This is supported by lack of study and research on buffalo calves as there is actually no literature being done on the cost of rearing buffalo calves. Next, it is difficult to calculate overall costs because the time period of costs calculation in this study is long which is from birth until weaning age. The other difficulty in doing the research is due to the cost component in rearing dairy calves are correlated with variation in growth (Mouritset *al*, 1997) and the uncertainty of the occurrence of the disease (Van Der Fels-Klerxet *al*, 2001). Hence the research question is “What is the total costs of rearing a buffalo calf?”

1.3 OBJECTIVE AND HYPOTHESIS

The section highlights the general objective and hypothesis of the present study. The general objective of this current study is to estimate the costs of rearing a buffalo calf from birth until weaning age. The study is going to search for related cost in rearing buffalo calf by taking account the direct and indirect cost in the farm related to the calf rearing. The cost that is correlated to the calf rearing also will be identified in the estimation of the cost. Research hypotheses were formulated based on general objective which is the increase of the cost to rear a buffalo calf from birth until weaning age will increase the overall cost in the farm.

1.4 SIGNIFICANT OF STUDY

This study will give insight on the cost of rearing a buffalo calf from birth until weaning age. Thus, this will give a good guide to farmer to focus and change on their practice and management in the farm accordingly. This will help them to support their decision on what cost should be focus to make the rearing cost more efficient. This study also will provide information on distribution of cost components on overall cost of rearing a buffalo calf from birth until weaning age. Moreover, there are limited studies in Malaysia and around the world that have investigated the costs of rearing a buffalo calf from birth until weaning age. Thus, this study may fill the knowledge gap in understanding the costs of rearing a buffalo calf. The findings of the study also provided more information in this field based on scientific proven, which will enriched the

knowledge on veterinarians field especially studies in buffalo calf. This study is also significant for practitioners specifically the Department of Veterinary Services, Ministry of Agriculture in order to highlight the issues of cost of rearing a buffalo calf from birth until weaning age. In the future, it will help Veterinarians in supporting their decision making during consulting and advising farmer.

Since cost of rearing a buffalo calf from birth until weaning age is a critical and crucial, the present study also important for intervention and prevention program planning by highlighting the predominance factors that may contribute to the a cost of rearing a buffalo calf from birth until weaning age. Based on this study, practitioners and policy maker may consider those dimensions when planning intervention and prevention program to enhance and empower potential protective factors and reduce possible risk factors of managers.

1.5 CHAPTER SUMMARY

This chapter begins with a brief introduction and background of the study. The significant of study were discussed to emphasize the important in conducting the study. Limitation is one of the obstacles faced during the period of study because of farmer uncertainty in their practice and also poor recording system. Lack of scientific study on buffalo farming also contributes to the difficulty in conducting the study.

monitor the prevalence of disease, use of drug to prevent resistance and reoccurrence of disease in the farm so that decision making in treatment can be easy.

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