UNIVERSITI PUTRA MALAYSIA

USAGE OF ANTIMICROBIALS AND EFFECTIVE MICROORGANISMS IN BROILER FARMS IN THE WEST COAST OF PENINSULAR MALAYSIA

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USAGE OF ANTIMICROBIALS AND EFFECTIVE MICROORGANISMS IN BROILER FARMS IN THE WEST COAST OF PENINSULAR MALAYSIA

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CERTIFICATION

It is hereby certified that I have read this project paper entitled "Usage of Antimicrobials and Effective Microorganisms in Broiler Farms in the West Coast of Peninsular Malaysia", by Yeo Yee Hein and in my opinion it is satisfactory in terms of scope, quality, and presentation as partial fulfilment of the requirement of the course VPD 4999 - Final Year Project.

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LIST OF ABBREVIATIONS

DOC	day-old chicks
DVS	Department of Veterinary Services
EM	Effective microorganisms
FCR	feed conversion ratio
FLFAM	Federation of Livestock Farmers' Associations of Malaysia
MyCC	Malaysia Competition Commission

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ABSTRAK

Abstrak daripada kertas projek yang dikemukakan kepada Fakulti Perubatan Veterinar untuk memenuhi sebahagian daripada keperluan kursus VPD 4999 – Projek Ilmiah Tahun Akhir.

PENGGUNAAN ANTIBIOTIK DAN MIKROORGANISMA EFEKTIF DI LADANG AYAM PEDAGING DI PANTAI BARAT SEMENANJUNG MALAYSIA

oleh

YEO YEE HEIN

2015

Penyelia : Prof. Datin Paduka Dr. Aini Ideris

Penggunaan antibiotik yang meluas di ladang telah menyumbang kepada kemunculan bakteria yang resistan terhadap antibiotik. Mikroorganisma efektif (EM) merupakan salah satu alternatif yang dicadangkan untuk menggantikan penggunaan antibiotik di ladang. Kajian ini bertujuan untuk menyelidik penggunaan antimikrobial dan EM di ladang ayam pedaging tempatan . Satu survei "cross-sectional" telah dilakukan secara rawak, melibatkan 24 ladang ayam pedaging yang terletak di Pantai Barat Semenanjung Malaysia. Kesemua 24 ladang didapati menggunakan sekurang-kurangnya satu jenis antibiotik untuk tujuan pencegahan dan rawatan. Amoxicillin (62.5%) merupakan antimikrobial yang paling kerap digunakan.

Lapan ladang (33.3%) didapati menggunakan EM. Lima (66.3%) daripada 8 ladang tersebut didapati menggunakan EM melalui semburan pada najis ayam; manakala 3 ladang (37.5%) memasukkan EM ke dalam air minuman ayam. Tujuh (87.5%) penternak daripada 8 ladang tersebut mengatakan bahawa terdapat pengurangan bau najis ayam; manakala 3 (37.5%) penternak mendapati bahawa penggunaan EM menghasilkan najis ayam yang lebih kering. Kajian ini menunjukkan penggunaan antibiotik yang meluas berbanding dengan EM di ladang ayam pedaging tempatan. Terdapat keperluan untuk membentuk strategi bagi menggalakkan penggunaan antibiotik yang lebih rasional, atau mencari alternatif kepada penggunaan antibiotik di ladang ayam pedaging tempatan .

Kata kunci: Antibiotik, Mikroorganisma efektif, Ladang ayam pedaging, Pantai Barat Semenanjung Malaysia

ABSTRACT

An abstract of the project paper presented to the Faculty of Veterinary Medicine in partial fulfilment of the course VPD 4999 – Final Year Project.

USAGE OF ANTIMICROBIALS AND EFFECTIVE MICROORGANISMS IN BROILER FARMS IN THE WEST COAST OF PENINSULAR MALAYSIA

by

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2015

Supervisor : Prof. Datin Paduka Dr. Aini Ideris

There is a rising concern of usage of antimicrobials in farms as they contribute to the emergence of antibiotic resistance. Effective microorganisms (EM) is one of the proposed alternatives to antimicrobials. The aim of this study was to investigate the usage of antimicrobials and EM in local broiler farms. A cross-sectional survey was conducted in 24 randomly selected broiler farms in the West Coast of Peninsular Malaysia. All 24 farms use at least one antimicrobial agent, for both prophylaxis and treatment purposes. Amoxicillin (62.5%) is the most commonly used antimicrobial. Eight farms (33.3%) reported usage of EM. Out of the 8 farms, 5 farms (62.5%) reported usage of EM via spraying onto the feces of the chickens; while 3 farms (37.5%) added EM into the drinking water. Seven (87.5%) of the 8 farms reported a decrease in fecal odour due to the usage of EM; while 3 (37.5%) of the 8 farms reported drier chicken manure. This study indicated that

antimicrobials are used more commonly as compared to EM in local broiler farms. There is a need for development of strategies to promote more rational and prudent use of antimicrobials, as well as the use of antimicrobial alternatives in local broiler farms.

Keywords: Antimicrobials, Effective microorganisms, Broiler farms, West Coast of Peninsular Malaysia

1.0 INTRODUCTION

There is a rising concern of using antibiotics for prophylactic purposes and as growth promoters in farms as it contributes to the emergence of antimicrobial-resistance microorganism. Effective microorganisms (EM) is one of the alternatives used by farmers in the agricultural industry. EM was developed by Dr. Teruo Higa of the University of Ryukyus, Japan in the 1980s. EM is a mixture of photosynthetic bacteria, lactic acid bacteria, yeasts, actinomycetes and fermenting fungi (Higa & Wididana, 1991).

In Malaysia, there is increasing popularity of the usage of EM in poultry farms as an alternative growth promoter. However, limited publications are available on the usage of EMs and its proclaimed beneficial effects in the local poultry industry. Thus, there is a need for more studies to be done on the subject to gather information on the usage of EM and its effects in local broiler farms. Other than that, although there have been several reports on antimicrobial resistant bacteria in animals in Malaysia (Abu-Daud *et al., 2014;* Geidam *et al.*, 2012; Mansouri-najand *et al.,* 2012; Ooi *et al.,* 2011; Zunita *et al.,* 2008), limited studies had been done on the usage of antimicrobials in the farms. Thus, study should be done to gather more information on the usage of antimicrobials in local broiler farms.

Thus, the objective of this study is to investigate the usage of antimicrobials and EM in broiler farms in the West Coast of Peninsular Malaysia. This study also aims to determine the frequency, methods and impact of usage of EM and antimicrobials in broiler farms.

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