DEDICATION

To my beloved family

My parents,

Ismail

Safaa

Alaa

Mohammed

Fatima

Acknowledgement

Praise be to Allah the Merciful, the compassionate. Had it not been due to His will and help, this work never been possible.

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ABSTRACT

The aim of this study was to investigate the possibility of using broiler manures as a cheap source of rumen degradable protein for raising Holstein Friesian heifers. In addition to study the effect of feeding chicken manures on some productive and reproductive performance of heifers.

Thirty heifer calves ranging between 2–3 month of age were chosen from the dairy herd of the Arab Company for Agricultural Production and Processing (ACAPP). They were divided into two equal groups, offered concentrates and roughages from weaning until the age of 15 – 17 months.

The control group was fed on the farm conventional ration, which consisted of wheat bran 32 %, groundnut cakes 10%, sorghum grains 40%, molasses15%, lime2 %, and sodium chloride 1% with 16.6% C.P. and energy 11.98 MJ/kg DM. While, the experimental group was fed on 30% poultry manures ration, which was introduced gradually within a two weeks adaptation period. The ration consisted of poultry wastes30%, groundnut hulls 7%, sorghum grains 50%, lime 2% and sodium chloride 1 % with 16.79 % C.P and ME 11.21 MJ/kg DM.

Some of the productive and reproductive performance was recorded as follows:

1. The mean final live weight of the control group was 241.9 ± 1.28 kg and of the treatment group was 234.77 ± 1.36 kg. These means were significantly different ($P < 0.01$).
2. The mean daily gain for the control group was 0.78 ± 0.02 kg. While for the experimental groups was 0.76 ± 0.03 kg. Differences were not significant ($P > 0.05$).
3. Age and weight at puberty for the control group were 292.13 ± 7.78 day and 233.4 ± 5.4 kg while for the treatment group was 297.33 ± 7.78 day and 239.00 ± 5.40 kg. Differences were not significant ($P > 0.05$).
4. Age and weight at successful service for the control group was 456.60 ± 3.10 day and 343.2 ± 4.9 kg while the results for the experimental group was 454.2 ± 4.9 day and 253.00 ± 4.9 kg. Differences were not significant ($P > 0.05$).
5. Number of services/conception for the control group is less than the experimental group they were 1.2 ± 0.13 and 1.7 ± 0.13 respectively with a significant difference ($P < 0.05$).
6. Gestation length for the control group was 275.8 ± 1.3 day while for the treatment group was 277.00 ± 1.34 day. Difference was not significant ($P > 0.05$).
7. Age at first calving for the control and treatment groups were 730.4 ± 3.81 and 741.86 ± 3.81 day respectively, with a significant difference ($P < 0.05$).

8. Birth weights of newly born calves for the control and treatment groups were 32.8 ± 1.03kg and 31.17 ± 0.95 kg, respectively without significant difference (P > 0.05).

9. Mean milk yield for the first hundred days for the control group was 1637.27 ± 130.89 litre while for the treatment group was 1730.03 ± 107.73 litre with no significant difference (P > 0.05).

Estimation of economical advantage of feeding poultry manure indicated that, the cost of growing the experimental group is less by 28% from the cost of the control group.

This study ended without any harmful effects of health hazards. In conclusion, feeding poultry manure up to 30% in growing heifers dairy heifers was practical, economic and without any significant side effect on production, reproduction and health of animals.

بسم الله الرحمن الرحيم

خلاصة الأطروحة

أجريت هذه الدراسة بغرض البحث في تغذية العجلات النامية في مزارع الألبان باستخدام بدائل علفية ذات قيمة غذائية جيدة وبتكلفة أقل كمخلفات الدواجن وأثرها علي بعض الصفات الإنتاجية والتناسلية. وقد استخدم في هذه الدراسة (30) عجلة فطيمة تتراوح أعمارها ما بين 2 – 3 شهور من مزرعة الشركة العربية لإنتاج والتصنيع الزراعي والتي تمتلك أبقار من سلالة الهولستين فريزيان. وقد تم تقسيمها إلى مجموعتين متساويتين وتمت تغذيتها على المركزات والأعلاف الخضراء من الفطام وحتى عمر 15– 17 شهر.

وقد غذيت مجموعة الشاهد بعلائق المزرعة التقليدية والتي تتكون من ردة القمح 32%, أمباز الفول السوداني 10% ، وحبوب الذرة 40% والمولاس 15% والحجر الجيري 2 % وملح الطعام 1% وتحتوي على 16.6% من البروتين الخام وطاقة مقدراها 11.98 ميقاجول / كيلوجرام.

أما مجموعة التجربة فقد تم إدخال مخلفات الدواجن تدريجياً لمدة اسبوعين كفترة انتقالية بنسبة 30% كبديل لأمباز بذرة الفول السوداني حيث تكونت العليقة من الآتي: مخلفات الدواجن اللاحمة 30% وقشرة الفول السوداني 7 % وحبوب الذرة 50 % والحجر الجيري 2 % وملح الطعام 1 %. وتحتوى على بروتين خام بنسبة 16.79 % وطاقة قدرها 11.21ميقاجول/كيلوجرام

وقد أوضحت النتائج المتعلقة ببعض الصفات الإنتاجية والتناسلية كما يلي:

1. معدل الوزن الحى النهائى كان 1.28 ± 241.49 كجم لمجموعة الشاهد ولمجموعة التجربة 1.36 ± 234.77 كجم وكان الفرق معنوياً ($P < 0.01$).
2. مقدار الزيادة الوزنية اليومية 0.03 ± 0.78 كجم لمجموعة الشاهد أما فى مجموعة التجربة فكانت 0.03 ± 0.76 كجم وكان الفرق غير معنوي ($P > 0.05$).

3. بلغ معدل العمر والوزن عند البلوغ لمجموعة الشاهد 7.78 ± 292.13 يوم و 5.4 ± 233.40 كجم أما لمجموعة المعاملة فقد بلغ 7.78 ± 297.33 يوم و 5.4 ± 239.00 كجم وكان الفرق غير معنوي ($P > 0.05$).
4. بلغ معدل العمر والوزن عند أول تلقيحه ناجحة لمجموعة الشاهد 3.10 ± 456.60 يوم و 4.9 ± 343.2 كجم بينما كان لمجموعة التجربة 6.9 ± 454.2 يوم و 4.9 ± 253.2 كجم وكان الفرق غير معنوي ($P > 0.05$).
5. وقد كان عدد مرات التلقيح اللازمة للإخصاب لمجموعات الشاهد اقل من مجموعة التجربة وهي كالآتي 0.13 ± 1.2 و 0.13 ± 1.7 على التوالي وكان الفرق معنوياً ($P < 0.05$).
6. بلغ طول فترة الحمل لمجموعة الشاهد 1.3 ± 275.8 ليوم ولمجموعة التجربة 1.3 ± 277.0 يوم وقد كان الفرق غير معنوياً ($P > 0.05$).
7. كما بلغ العمر عند الولادة الأولي لمجموعتي الشاهد والتجربة كالآتي: 3.81 ± 730.4 يوم و 3.81 ± 741.86 يوم على التوالي وقد كان الفرق معنوياً ($P < 0.05$).
8. أما أوزان المواليد لمجموعتي الشاهد والتجربة كانت كالآتي 1.03 ± 32.8 كجم و 0.95 ± 31.17 كجم على التوالي وكان الفرق غير معنوي ($P > 0.05$).
9. بلغ معدل اللبن للمائة يوم الأولي لمجموعة الشاهد 130.89 ± 1637.27 لتر ولمجموعة التجربة 107.73 ± 1730.03 لتر وقد كان الفرق غير معنوي ($P > 0.05$).

وعند حساب الجدوي الاقتصادية باستخدام فضلات الدواجن في تغذية العجلات النامية فقد إتضح أن تكلفة عجلات التجربة أقل عن تكلفة عجلات مجموعة الشاهد بنسبة 28% كما لم تلاحظ أى أعراض مرضية. من كل ما تقدم نستنتج أن استخدام فضلات الدواجن بنسبة تصل 30% من العليقة المركزة للعجلات النامية ذو فائدةً إقتصاديةً وليس له تأثير سلبي على الصفات الإنتاجية والتناسلية والصحة العامة للحيوانات.

LIST OF CONTENTS

	Page
Dedication	i
Acknowledgements	ii
Abstract	iv
Arabic Abstract	vii
List of Contents	x
List of Tables	xii
List of Figures	xiv
CHAPTER ONE: INTRODUCTION	1
CHAPTER TWO: LITERATURE REVIEW	3
2.1. Poultry manure	4
2.2. Chemical composition	4
2.2.1. Chicken manure incorporated with concentrates	8
2.2.2. Chicken manure ensiled with straws	28
2.3. Effect of protein on some reproductive performance	33
2.4. Methods of evaluating reproductive efficiency	36
2.4.1. Age and weight at puberty	36
2.4.2. Conception rate and number of cervices/conception	38
2.4.3. Gestation length	39
2.4.4. Age at first calving	40
CHAPTER THREE: MATERIALS AND METHODS	42
3.1. Location and history	42
3.2. Experimental animals	43

3.3. Feeding treatment..... 44

3.4. Parameters studied..... 47

3.5. Statistical analysis..... 51

CHAPTER FOUR: RESULTS..... 53

4.1. Productive traits..... 53

4.1.1 Weight at puberty and successful service..... 61

4.1.2 Birth weights of calves born to the two treatment groups 61

4.1.3. Milk yield for the first hundred days..... 65

4.2 Reproductive traits..... 70

Correlation Analysis..... 78

Correlations between different traits..... 78

CHAPTER FIVE: DISCUSSION..... 83

CONCLUSIONS..... 90

RECOMMENDATIONS..... 91

REFERENCES..... 92

LIST OF TABLES

Table	Title	No.
1.	Ration formulation of the control and treated group	46
2.	Chemical analysis of chicken manure	46
3.	Means and standard errors of final live weight and weight gains	54
4.	The analysis of variance for the treatment , age (weeks) and the interaction of treatment on body weight and weight gain / day (Kg)	55
5.	Means and standard errors of cumulative weight gain in the control and treatment groups	59
6.	Means and standard errors of weight at puberty and weight at successful service in the control and treatment groups	62
7.	Analysis of variance for the effect of treatment ration on weight at puberty and weight at successful service	63
8.	Means and standard errors of birth weights of calves born to control and treatments groups	64
9.	Analysis of variance for the effect of treatment ration on birth weight of calves	64
10	Means and standard errors of 100 – days milk yield of the control and treatment group	65
11.	Analysis of variance of the effect of treatment and age at first calving on milk yield	66
12.	The regression of milk yield on week of lactation	67
13.	Mean milk yield and standard errors of the three age groups	68
14.	Individual and overall means and standard errors of some reproductive traits	71
15.	Analysis of variance for the effect of the treatment ration and reproductive traits	73
16.	Correlations between various productive and reproductive traits	79

17. Correlations between various productive and reproductive traits and milk yield 81

LIST OF FIGURES

Fig.	Title	No.
1.	The relationship between age and mean final live weight.....	57
2.	The relationship between age and mean live weight gain……..…….……	58
3.	The relationship between age and cumulative weight gain	60
4.	The effect of ration and age on milk yield..…….....…..…	69
5.	The relationship between weight at puberty and age at first calving..…….....……	75
6.	The relationship between age at puberty and age at successful services..…….....…….…..…	76
7.	The relationship between age at puberty and weight at puberty .....…….....…..…	77