

## **Dedication**

To my parents,

My brother and sister,

My friends and colleagues ...

## **Acknowledgement**

Praise to Allah, who gave me the strength and patience to complete this work.

Next, I would like to thank and gratitude my supervisor Prof. Mohamed Tag Eldin Ibrahim for his guidance, help and encouragement throughout the period of the research.

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## Abstract

This study was carried out to evaluate the effects of addition *Cymbopogon proximus* (*Cp*) in broiler diets on the performance, carcass characteristics, blood picture and Newcastle antibody titer.

A total of one hundred twenty, 7 days old unsexed broiler chicks (Ross308) approximately same weight (150g) were divided into four treatment groups (30) chicks/group. Each group was sub divided into (3) replicates (10) chicks each, in stratified and completely randomized design. Eight experimental diets were formulated to meet the nutrient requirements of broiler chicks, four diets to starter period and four diets to finisher period. The control diets (A) contain 0% *Cp*, and other diets (B, C and D) contain (1, 2 and 3%) *Cp* respectively.

Results show there are significantly negative effect of *Cp* ( $P < 0.05$ ) on feed intake, weight gain, feed conversion ratio, production efficiency factor, protein efficiency ratio and energy efficiency ratio. On the other hand *Cp* significantly improve lysine efficiency and increase liver weight. Furthermore a significant reduction in platelet ( $P < 0.05$ ) was also observed. Whereas there are no significant affect on Newcastle antibody titer.

## الخلاصة

أُجريت هذه الدراسة لتقييم أثر إضافة المحريب الى علائق الدجاج اللاحم علي الأداء، خصائص الذبيح، صورة الدم والاجسام المضادة للنيوكسل.

استخدم عدد 120 كتكوت عمر 7 أيام من سلالة (روص 308) ذات أوزان متساوية تقريبا (150 جرام) قسمت الطيور عشوائيا الي 4 مجموعات 30 طائر لكل مجموعة، كل مجموعة قسمت الي 3 مكررات 10 طيور لكل مكررة وفقا لنظام طبقي كامل العشوائية.

تم تكوين ثمانية علائق لمقابلة الاحتياجات الغذائية بواقع 4 علائق بادئ و 4 علائق ناهي، علائق الكنترول (A) تحتوي على 0% محريب والعلائق الاخرى (B، C و D) تحتوي على 1، 2 و 3% محريب علي التوالي.

أظهرت النتائج وجود تأثير معنوي سالب للمحريب ( $P < 0.05$ ) على إستهلاك العلف، الزيادة في الوزن، معامل التحويل الغذائي، معامل الكفاءة الانتاجية، معدل كفاءة البروتين ومعدل كفاءة الطاقة. ومن ناحية اخرى ادى المحريب الي تحسين كفاءة اللايسين معنويا ( $P < 0.05$ ) كما أدى الي زيادة وزن الكبد ومن جهة أخرى لوحظ إنخفاض معنوي في الصفائح الدموية ( $P < 0.05$ ). بينما لم يؤثر معنويا على الاجسام المضادة للنيوكسل.



## **Introduction**

Sudan is the second largest country in Africa, covering over 1.882.000 km<sup>2</sup>, lies within the tropical zone between latitudes 8.45 to 23.8 North and longitudes 38.24 to 21.4 East (Jadin, 2011). It is characterized by a wide range of climate variations; extends gradually from the desert in the north, with its hot dry climate and almost no vegetation cover, to the African Sahel Zone in the centre (dry to semi-dry climate) with its light and dense savanna. Mean annual temperatures vary between 26°C and 32°C across the country. The most extreme temperatures are found in the far north, where summer temperatures can often exceed 43°C (Sumaya, 2009).

Sudan recognized the potential of the poultry industry in the early fifties of the last century when imported breeders were brought to Sudan by the government and private sector. Subsequently peasants recognized the potential of including poultry production in their farms, this was further accelerated by urban development after the country independence in 1956. In late seventies many investors from Arab Gulf States started commercial egg and broiler production in Sudan. Nowadays poultry industry is booming and growing rapidly (Writer, 2012).

Poultry meat and eggs are widely available, relatively cheap and can be of central importance in helping to meet shortfalls in essential nutrients, particularly of poor people. The incidence of several common metabolic diseases associated with deficiencies of critical dietary minerals, vitamins and amino acids can be reduced by the contribution of poultry products rich in all essential nutrients except vitamin C (FAO, 2015).

Medicinal Aromatic Plants (MAPs) play a valuable and important role in economic, social, cultural and ecological aspects of local communities all over the world. MAPs can be defined as botanicals that provide people with medicines to prevent disease, maintain health or cure ailments (Elaine, 2011). *Cymbopogon proximus* (Mahareb) is one of the MAPs, traditionally used as medicinal herb (Abou-Shoer *et al.*, 2011).

The objectives of this research are:

- 1/ to study the effect of *Cymbopogon proximus* on broiler performance.
- 2/ to study the effect of *Cymbopogon proximus* on carcass characteristics and some blood values.