

# DEDICATION

This study is dedicated to  
the soul of my father  
my mother and my family.

## **ACKNOWLEDGEMENTS**

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## **ABSTRACT**

A study was conducted to investigate the effect of kunan on growth rate, feed intake, live body measurements, carcass characteristics and meat quality of Sudanese desert sheep. Fourteen male lambs of Sudanese desert sheep with average weight of 14.46 Kg and with average age of about seven months were allotted randomly to two equal groups.

One group was kunanned and the other group was left without kunan. All animals were offered a concentrate diet (10.97 % crude protein and 15.70 % metabolisable energy) ad libitum.

Kunan increased the feed consumption, kunanned lambs had significantly ( $P < 0.01$ ) more feed intake than entire lambs.

Kunan had no significant ( $P > 0.05$ ) effect on growth rate, feed conversion ratio and slaughter weight. Live animal measurements were almost the same for the two groups.

Body components expressed as percentages of empty body weight showed no significant effects of kunan with the exception of lungs and trachea and skin which were significantly ( $P < 0.05$ ) heavier for entire males than kunanned lambs, while the latter had significantly ( $P < 0.05$ ) heavier heart than the former.

The proportion of the various wholesale cuts expressed as percentages of cold side weight were not significantly different between the two sex

groups .

Entire lambs had significantly ( $P < 0.05$ ) higher fat percentage , while kunanned lambs had significantly ( $P < 0.01$ ) higher bone percentage than entire lambs .

Kunan affected the meat chemical composition, where fat percentage was significantly ( $P < 0.01$ ) increased in entire lambs while moisture and protein percentages were not significantly different . There was a tendency for kunanned lambs to exhibit higher percentages compared with entire males . Entire lambs had significantly ( $P < 0.01$ ) lower percentages in both sacroplasmic and myofibrillar proteins .

Water holding capacity was studied . Differences due to kunan were observed among the two treatment groups . Kunanned lambs had significantly ( $P < 0.01$ ) lower water holding capacity and had significantly ( $P < 0.01$ ) higher pH value than entire lambs .

## ملخص الأطروحة

أجريت الدراسة للبحث عن أثر الكنان في الضأن الصحراوي على النمو اليومي ، إستهلاك الغذاء ، قياسات الجسم ، مكونات الذبيحة و التركيب الكيميائي للحم .

شملت الدراسة عدد 14 رأس من الضأن الصحراوي بمتوسط وزن

إبتدائي 14.46 كجم ، ومتوسط أعمارها حوالي 7 أشهر . وزعت عشوائياً إلى

مجموعتين متساويتين ( أ ) و ( ب ) إحتوت كل مجموعة على عدد 7 من الحملان .

المجموعة ( ب ) تم إجراء الكنان لها بينما تركت المجموعة ( أ ) بدون كنان .

أعطيت الحملان في المجموعتين عليقة مركزة تحتوي على 10.97 بروتين

خام و 15.70 طاقة مهضومة (جدول 1) .

وجد أن هنالك أثرٌ معنوي للكنان على إستهلاك الغذاء ، حيث سجلت

الحملان في المجموعة ( ب ) زيادة (  $P < 0.01$  ) في إستهلاك العليقة ، بينما لم

يكن للكنان أثرٌ معنوي (  $P > 0.05$  ) على معدل النمو اليومي ، كفاءة التحويل

الغذائي و نسبة التصافي للوزن الحي عند الذبح . كما كانت قياسات الجسم

مقارنة في المجموعتين .

الحملات في المجموعة (أ) لها نسبة دهون مئوية أعلى (  $P < 0.05$  ) ،

بينما سجلت الحملات في المجموعة (ب) نسبة عظم مئوية أعلى (  $P < 0.01$  )

من المجموعة الأخرى .

أظهر التحليل الكيميائي للحم أن للكنان أثرٌ معنوي ، حيث كانت النسبة

المئوية للدهن زائدة (  $P < 0.01$  ) في لحم الحملات في المجموعة (أ) ، بينما الفرق في

النسبة المئوية للرطوبة والبروتين لم يكن معنوياً على الرغم من زيادتهما في لحم

الحملات في المجموعة (ب) . سجلت الحملات في المجموعة (ب) نسبة بروتين

- ساكروبلازمي و مايوفاييري- أعلى (  $P < 0.01$  ) من المجموعة الأخرى .

لوحظ أن للكنان أثرٌ معنوي على قابلية حفظ الماء و على الأس الهيدروجيني

للحم ، حيث كان الأس الهيدروجيني للحم الحملات في المجموعة (ب) أعلى

(  $P < 0.01$  ) من المجموعة (أ) ، بينما سجلت الأخيرة قابلية حفظ ماء أعلى

(  $P < 0.01$  ) من المجموعة الأخرى .