

Dedication

To .. Who loved me before I do to them, gave me without
.asking

And burned their selves to light me the way..so they
..teach me that life is tender..And love is the fountain of life

To.. Who gave me the meaning of live...And suffered a
.hardship for me

My beloved mother....God gives you health and wellness

,To....Source that gave me hope in despair's moments

...My sisters

My brothers

I have to say

My tragedies are feeling powerless to express facts in a
way make me satisfy.. and about all of you beloved, it's my
...weakness more than possibility

So I will keep silent

Acknowledgement

Firstly All my thanks due to **Allah** for his uncountable gifts, Then I would like to express my sincere gratitude to my supervisor, **Prof. Dr. A. Aziz Makkawi**, for his kind support, supervision , guidance, valuble recommendations and .continous encouragement through my hardest times

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Special thanks and a ppreciation are due to **animal production department labors** for their valuable help in .preparing this research

Abstract

The effects of chromium supplementation to the ration
on the yield and milk composition of Nubian goats

This experiment was conducted in the department of
animal production of the college of agriculture shambat
(SUST), during the period of (18-11-2012 to 4-4-2013

Twelve Nubian goat, which have more than one
production season were selected and accordingly divided in
to three equal groups (A, B, C) based on their averaged body
weights

The animals in group A and C were fed with chromium
supplementation added as 1.25 ml g to each supplemented
group according to their averaged body weights , as
(recommended by (Alltech company, USA

Average ambient temperature in the shed was recorded
to study it

Effect on the experimental animal body temperature
and hence the effect of chromium supplementation on the
experimental animal body temperature , feed intake and the
effects on milk yield and composition of the animals

-:The results of this study reflected the following

No significant difference in body temperature •
between all the experimental animals was
rdcorded

significant difference ($p \leq 0,01$) effect of chromium supplemented on milk yield of the two experimental group (A& C) compared with the .(control group (B

Also a significant ($p \leq 0.05$) effect of the chromium supplemented on the solid not fat (SNF) in the milk of the treated group as indicated the following :table

%Lactose	%Ash	%SNF	Protein %	%Fat	Treatme nt
1.12±3.56	0.09±0. 95	1.37±9.0 5	0.58±2. 80	0.37±2. 05	Treated A
1.59±3.07	0.08±0. 64	2.37±9.6 3	0.74±3. 26	0.64±2. 60	Treated C
1.62±3.53	0.08±0. 72	1.99±10. 83	0.86±3. 52	0.49±3. 00	Control B

المستخلص

أثر إضافة عنصر الكروميوم للعليقه على إنتاجية ومكونات اللبن فى الماعز النوبى. أجريت هذه الدراسة بحظائر قسم الإنتاج الحيواني جامعة السودان للعلوم والتكنولوجيا (شمبات) في الفترة من 18/11/2012 م - 4/4/2013 م.

تم اختيار عدد 12 ماعز منتجة من فصيلة الماعز النوبي التي لها أكثر من موسم إنتاج ' تم تقسيمها إلى ثلاثة مجموعات متساوية حسب متوسط الأوزان وموسم الإنتاج.

المجموعات المعاملة (الأولي والثالثة) تمت تغذيتها علي العليقة المضاف إليها عنصر الكروم حسب متوسط وزن المجموعه المعامله بمعدل 1.25 ملجم وذلك حسب توصيات الشركة المنتجة (Alltech.USA). تمت دراسة متوسط درجات الحرارة داخل الحظيره لمعرفة أثر ذلك علي درجة حرارة الجسم لحيوانات التجربه وأثر إضافة عنصر الكروم علي درجة حرارة الجسم ثم معدل إستهلاك الغذاء وأثر كل ذلك علي إنتاجية ومكونات اللبن المنتج ' أظهرت نتائج هذه التجربه علي أنه:-

- لا يوجد تأثير معنوي في تغيير درجة حرارة الجسم في كل حيوانات التجربة.
- كما أظهرت النتائج بأن إضافة عنصر الكروم أدى إلى زياده معنويه ($p \leq 0,01$) في أوزان الحيوانات المعامله (المجموعه الأولي والثالثه علي التوالي 92 ± 30.16 kg و $1.94 \text{ kg} \pm 38.92$ بالرغم من عدم وجود فروقات في العلف المستهلك لكل المجموعات.
- إضافة عنصر الكروم لعليقة الماعز المنتجه للبن أدت إلي زياده معنويه ($p \leq 0,01$) في إنتاج الحليب ± 1.458 litter 319.8 أو 403.04 ± 1.457 litter في المجموعه الاولي والثالثه علي التوالي مقارنةً مع مجموعة السيطرة 0.968 ± 119 .liter79 .
- كما أظهرت النتائج أن إضافة عنصر الكروم له تأثير معنوي ($p \leq 0.05$) على مكونات جوامد اللبن مما أدى إلى انخفاض هذه النسب في المجموعات المعاملة حسب ماهو موضح أدناه:

المعا ملات	نسبة الدهن	نسبة البروتين	نسبة الماء	نسبة الرماد	نسبة اللاكتوز
المعا ملة A	2.05 ± 0.37	2.80 ± 0.58	9.05 ± 1.37	0.59 ± 0.09	3.56 ± 1.12
المعا ملة C	2.60 ± 0.64	3.26 ± 0.74	9.63 ± 2.37	0.64 ± 0.08	3.07 ± 1.59
السي طرة B	3.00 ± 0.49	3.52 ± 0.86	10.83 ± 1.99	0.72 ± 0.08	3.53 ± 1.62

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LIST OF ABBREVIATION

Acid Detergent Fiber	ADF
Body Weight	BW
Chromium	Cr
Dry Matter	DM
Dry Matter Intake	DMI
Glucose Tolerance Factor	GTF
Non-Esterified Fatty Acids	NEFA
Part Per Billion	Ppb
Temperature Humidity Index	THI
Total Mixed Ration	TMR