

***I would like to dedicate this work to....***

***The memory of my parents...***

***Wife Marum, son Assim, daughters Rania and Rayian...***

***And my Student Zeinab Ali Elhussein who made this dream to  
come true...***

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The present study was conducted to investigate feedlot performance, carcass characteristics and some haematological parameters of Nubian goat kids fed increasing levels (0, 10, 25, and 20%) of *Cajanus cajan* ,in replacement of groundnut cakes.

The study was conducted in the College of Veterinary Medicine and Animal Production Farm at Kuku, during two seasons (summer and winter). Each feeding trials lasted for seventy days .The experimental animals were forty, intact male Nubian kids.

The results have shown that animals fed high levels of *Cajanus cajan* (15 % and 20 %) have recorded the best values for the feedlot performance, carcass characteristics and some blood profile parameters.

The highest feed lot performance values were obtained by groups fed (15 % and 20 %) level of *Cajanus cajan* in winter season, while the lowest values were recorded by groups fed (0 % and 10 %) level of *Cajanus cajan* in the summer trial.

The mean daily feed intake values ranged between 0.38 kg as the lowest value obtained by group A control summer trial and 0.52 kg as the highest value obtained by group fed (20 %). The overall winter mean values were better than summer values. The highest weekly weight gain value was 0.67 kg obtained by group fed (20 %) *Cajanus cajan* in winter trial while the lowest value was 0.39 kg recorded for group fed (10 %) *Cajanus cajan* summer trial. The feed conversion ratio values ranged between 7.28 and 5.31 achieved by group fed (0 %) *Cajanus cajan* summer trial and group fed (20 %) *Cajanus cajan* winter trial group respectively.

Most of the carcass characteristics best mean values were obtained by groups fed (15 and 20 %) *Cajanus cajan* winter trial groups. The best values were 47.93 %, 2.76%, 56.11% for the carcass yield, shrinkage and muscle percentage respectively. The worst values were 44.75 %, 6.02 % and 54.09 % for the carcass yield, shrinkage and muscle percentage respectively, obtained by the control group in summer trial. The overall mean values for nearly all parameters tested for the carcass characteristics were higher in winter than summer.

The erythrocytic series RBCs count, Hb, PCV, MCV, MCH and MCHC best mean values were  $12.81 \times 10^6$  ml, 11.98 mg/d , 31.37 % 10.05 (pg) , 23.95 (fl) and 33.96 % respectively, obtained by group fed (20%) *Cajanus cajan*. While the lowest values for the erythrocytic series were RBCs  $10.34 \times 10^6$  ml, Hb 9.09 mg/d, PCV 28.22%, MCH 7.70 (pg) MCV 20.2 (fl) and MCHC 32.33 % obtained by the control group summer trial. All erythrocytic overall mean values were higher in winter than summer.

The total leukocytes count did not vary among groups; neither season nor feed had a significant effect on the total leukocytes count.

اجريت الدراسة الراهنة في منطقة حلة كوكو بمزرعة كلية الطب البيطري والإنتاج الحيواني – جامعة السودان للعلوم والتكنولوجيا وذلك بهدف الإستفادة من اللوبيا العدسي كمصدر بروتين لعلائق الحيوان.

نفذت التجربة في شتاء (2004) ثم كررت بنفس المعايير في صيف (2005) وذلك لدراسة تأثير اضافة تراكيز مختلفة للعلائق في فصلي الشتاء والصيف . استغرقت كل تجربة 70 يوماً

واستخدمت فيها 40 من صغار ذكور الماعز النوبي في كلٍ من التجريبتين . قسمت الحيوانات إلى 4 مجموعات . اضيفت لعلائق كل مجموعة تراكيز من اللوبيا العدسي بنسبة 0 % ، 10 % ، 15 % و 20 % علي التوالي . خلال التجربة وعند نهايتها اجريت إختبارات علي الأداء العام للحيوانات والتي شملت التسمين ، خصائص الذبيحة وإختبارات مكونات الدم .

اوضحت نتائج التجارب أن إضافة اللوبيا العدسية في العلائق بنسبة 15 % و 20 % كان لها تأثير إيجابي في زيادة الوزن وكمية العلف المستهلك ورفع الكفاءة التحويلية للعلائق . اظهرت المجموعة التي أضيف إلي عليقتها 20 % لوبيا عدسي في فصل الشتاء أعلى معدل في كمية العلف الجاف المستهلك في اليوم 0.52 كيلوجرام وكانت زيادة الوزن الإيسوعية 0.67 كيلوجرام للواحد وذلك بأقل كفاءة تحويلية كان مقدارها 5.31 .

مجموعة التحكم بدون إضافة لوبيا عدسي اظهرت في الصيف أقل معدل للعلف المستهلك 0.38 كيلوجرام وكانت الزيادة في الوزن الإيسوعي 0.39 كيلوجراماً ، كما ارتفعت الكفاءة التحويلية للعلف إلى 7.28 .

كما بينت نتائج الدراسة أن خصائص الذبيح ممتازة للحيوانات المغذاة علي علائق مضاف إليها اللوبيا العدسي بنسبة 20 % في فصل الشتاء وكانت نسب التصافي ونسبة العضلات وإنكماش الذبيحة كما يلي 47.99 % ، 54.09 % و 2.67 % علي التوالي . بينما كانت نتائج المجموعة (أ) بدون لوبيا عدسي منخفضة وهي كما يلي 44.75 % ، 54.09 % و 6.02 % علي التوالي لنسب التصافي ، العضلات وإنكماش الذبيح .

لقد اشارت الدراسة إلى إرتفاع معدلات مكونات الدم في الحيوانات التي غذيت بإضافة 20 % لوبيا عدسي لعلائقها في فصل الشتاء وكانت النتائج معدل كريات الدم الحمراء  $(12.81 \times 10^6 / \text{مل})$  ، الهيموقلوبين 11.98 ملغ / ديسي لتر ، حجم الخلية المرصوص 31.37 % ، متوسط هيموقلوبين الخلية 10.55 (pg) ، متوسط حجم الخلية 23.95 (fl) ومتوسط تركيز هيموقلوبين الخلية 33.96 % .

اظهرت حيوانات التحكم التي غذيت بعليقة 0 % في فصل الصيف معدلات أقل عن حيوانات التجربة حيث كانت كريات الدم الحمراء  $(10.34 \times 10^6 / \text{مل})$  ، الهيموقلوبين 9.96 ملغ/ديسي لتر ، حجم الخلية المرصوص 28.22 % ، متوسط هيموقلوبين الخلية 7.70 (pg) ، متوسط حجم

الخلية 20.21 (fl) ومتوسط تركيز هيموقلوبين الخلية 32.33 % . لم تؤثر إضافة تراكيز عالية من اللوبيا العدسي على معدلات الكريات البيضاء ، كما لم يلاحظ تأثير معنوي على الكريات البيضاء . لقد خلصت الدراسة إلى أن إضافة تراكيز عالية (15 % و 20 %) إلى علائق صغار ذكور الماعز النوبي في فصل الشتاء قد حسنت من أدائها العام في التسمين وأسفرت عن خصائص ذبيح ممتازة كما أدت إلى زيادة معدلات مكونات الدم ولم تؤثر معنوياً على معدلات الكريات البيضاء .

- **RBCs** : Red blood cells .



- **WBCs** : White blood cells .
- **Hb** : Haemoglobin concentration .
- **PCV**: Packed Cell Volume.
- **MCV**: Mean corpuscular volume.
- **MCH**: Mean corpuscular haemoglobin concentration.
- **MCHC**: Mean corpuscular haemoglobin concentration.
- **F.C.R.:** Feed conversion ratio.
- **F.I.:** Feed intake.
- **(M: B)**: Muscle Bone ratio.
- **ME**: Metabolizable energy.
- **DP**: Dressing percentage.