

## ***Dedication***

*To soul of my husband*

*To my dear parents,*

*My Kids, Wigdan and Raw Bulbul,*

*Brothers and sisters,*

*Colleagues and friends*

## Acknowledgements

First the thanks all the thanks to the God the Lord, No things is deserving of God, the most merciful compassionate and racious.

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## **Abstract**

This research was carried out to determine the in situ rumen degradability characteristics of protected proteins. Sesame cake (SC) was used as protein source. SC was treated with formaldehyde, hydrochloric acid and sodium hydroxide. Three rumen cannulated bull were used in the study. Both untreated SC and treated SC with formaldehyde, hydrochloric acid and sodium hydroxide were incubated in the rumen for 0, 6, 12, 24, 36, 48 and 72 hours. At the end of 72 hours of rumen incubation, degradability



for crude protein of untreated SC and treated SC with formaldehyde, hydrochloric acid and sodium hydroxide was found as 43.2, 30.9, 30.5 and 27.2 %; and dry matter degradability as 94.3, 62.6, 88.9 and 86% respectively. Effective degradability for crude protein of untreated SC and treated SC with formaldehyde, hydrochloric acid and sodium hydroxide was 75.2, 62.7, 64.6, and 66.8,% and dry matter as 83.1, 62.7, 58.1, and 76.5 %; respectively. Results indicated that, formaldehyde; hydrochloric acid and sodium hydroxide treatment decreased crude protein and dry matter degradability, potential degradability, degradation rate constants and effective degradability of sesame cake.

### الخلاصة

هذه التجربة اجريت لتحديد قابلية تكسير البروتين داخل الكرش وكيفية حمايته و لقد تم استخدام امباز السمسم كمصدر للبروتين، وتمت معالجته كيميائيا بالفورمالدهيد، هيدروكسيد الصوديوم و حامض الهيدروكلوريك. تم استخدام فتحة في الكرش لثلاثة عجول ( وزن تقريبي 250كج) و من ثم تمت تغذيتها بعليقة تحتوي علي 50% قصب الذرة و 50% مركز. تم تحضير امباز السمسم المعالج والغير المعالج كيميائيا بالفورمالدهيد ، هيدروكسيد الصوديوم و حامض الهيدروكلوريك في الكرش لفترات زمنية 0،6، 12،24، 36، 48، و 72 ساعة. و بعد 72 ساعة من التحضين

داخل الكرش وجد ان تكسير البروتين الخام لامباز السمسم غير المعالج و المعالج كيميائيا بالفورمالدهيد و بهيدروكسيد الصوديوم و حامض الهيدروكلوريك 43، 31، 30، 27% علي التوالي و كان تكسير المادة الجافة 94، 63، 86 و 89% علي التوالي. ولقد أوضحت النتائج ان نسبة البروتين الخام والمادة الجافة المفقودة من الاكياس التي تحتوى على امباز السمسم غير المعالج كيميائيا اكبر من النسبة المفقودة من الاكياس التي تحتوى على امباز السمسم الذي تمت معالجته كيميائيا بمستوى معنوية ( $P < 0.05$ ) لكل فترات التحضين المختلفة. كما وجدت ان درجة قابلية البروتين والمادة الجافة للتكسير داخل الكرش اقل فى امباز السمسم الذى تمت معاجته كيميائيا باختلاف معنوية ( $p < 0.05$ )

ولقد اوضحت الدراسة ان المعالجة بالفورمالدهيد توفر حماية اكثر للبروتين و المادة الجافة اكثر من هيدروكسيد الصوديوم و حامض الهيدروكلوريك.