

## **الاستهلال**

بسم الله الرحمن الرحيم

قال تعالى ( له ملك السموات و الارض و الى الله ترجع الامور)

صدق الله العظيم

الاية 5 من سورة الحديد

**DEDICATION:**

This work is dedicated to my parents, brothers, sisters, wife and daughters with love and respect.

**ACKNOWLEDGEMENT:**

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## **Abstract**

The experiment was conducted to assess the effects of different levels of lupine (*Lupinus*) extract as milk preservative on the physicochemical and microbial load of the raw cow's milk during 2016. The milk samples were purchased from fresh bulked milk dairy farm of the College of Animal Production Science and Technology, Sudan University of Science and Technology at Kuku area. Five treatments were carried out in this study; in the first treatment raw cow's milk left at room temperature without lupine extract and in (the 2nd , 3rd, 4th and 5th)

treatments 0.5%, 1%, 1.5% and 2% of lupine extract were added to fresh milk samples (four hundred mls of milk for each sample) respectively . The raw milk samples in all treatments left for 0, 1, 2, 3, 4 and 5 hours at room temperature. The physicochemical (protein, fat, titratable acidity, total solids not fat, pH and ash) and microbiological (total bacteria count) analyses of the milk samples were taken. The results showed that the lupine extract significantly ( $p < 0.05$ ) affected the protein, fat, total solids not fat and pH contents of the milk samples, while no significant ( $P \geq 0.05$ ) effect was found in the acidity and ash contents of raw milk samples. The storage period significantly ( $p < 0.05$ ) affected the fat, pH and acidity of raw milk samples, while no significant effect was reported in the protein, total solids not fat and ash contents. The microbial load of raw milk (Total bacterial count) was significantly ( $p < 0.05$ ) affected by the increase levels of lupines. The storage period significantly ( $p < 0.05$ ) affected the microbial load of the fresh milk.

### مستخلص البحث

الدراسة اجريت بهدف تقييم اثر إضافة مستخلص الترمس بمستويات مختلفة على حفظ اللبن . تم شراء عينات اللبن الخام من مزرعة كلية علوم و تكنولوجيا الانتاج الحيوانى جامعة السودان حلة كوكو خلال عام 2016. فى هذه الراسه اجريت خمسة معاملات، فى المعاملة الاولى لبن ابقار خام ترك فى درجة حرارة الغرفة بدون اضافة مستخلص الترمس، وفى معاملات (الثانية، الثالث، الرابعة و الخامسة) تمت اضافة تراكيز مختلفة من مستخلص الترمس بنسب 0.5%، 1%، 1.5%، و 2% و تم اضافتها الى عينات اللبن الخام (اربعمائة مللتر من لبن الخام لكل عينة) مباشرة على التوالى.

عينات اللبن الخام لكل المعاملات خزنت لمدة ساعة، ساعتين، ثلاثة ساعات، اربعة ساعات و خمسة ساعات، فى درجة حرارة الغرفة. تم التحليل الكيمياءى (الدهن و البروتينو الحموضة والاس الهيدروجينى والجوامد اللادهنية و الرماد) و الميكروبي (العد البكترى) لعينات اللبن الخام المختلفة. اظهرت النتائج بان مستخلص الترمس له اثر معنوى على البروتين، الدهن، المواد الصلبة اللا دهنية و الاس الهيدروجينى، بينما لا يوجد اثر معنوى على درجة الحموضة و الرماد لعينات اللبن الخام. وايضا اثيرت فترة التخزين معنويا على الدهن والاس الهيدروجينى و درجة الحموضة فى اللبن الخام، بينما لم تؤثر على البروتين والجوامد اللا دهنية و الرماد. و كما اظهرت النتائج بان المحتوى الميكروبي تاجر معنويا بزيادة نسب مستويات مستخلص الترمس لعينات اللبن و كذلك اثيرت فترة التخزين معنويا على المحتوى الميكروبي لعينات اللبن الخام.