الاستهلال

بسم الله الرحمن الرحيم

قال تعالى (له ملك السماوات و الأرض و إلى الله ترجع الأمور)

صدق الله العظيم

الإية 5 من سورة الحديد

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

ACKNOLEDGEMENT:
First almost grateful thanks to ALLAH for all has giving me to complete this work. I would like to express my appreciation and thanks to my supervisor Prof. Dr. Omer Ibrahim Ahmed Hamid, for his supervision, suggestions and available advices as well as his continuous assistance until this study was accomplished, my thanks to all my family members for their assistances during the study, my thanks extended to my all friends for their assistances and encouragements.

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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≥ 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.

**Summary**

The study was conducted to evaluate the effect of adding lupine extract at different levels on the preservation of milk. Fresh milk samples were obtained from a farm in the University of Science and Technology, Sudan, in the year 2016. Five treatments were conducted, in the first treatment milk was left at room temperature without adding lupine extract. In the second, third, fourth, and fifth treatments, lupine extract at different concentrations (0.5%, 1%, 1.5%, and 2%) were added to the milk samples. The physicochemical (protein, fat, titratable acidity, total solids not fat, pH, and ash) and microbiological (total bacteria count) analyses of the milk samples were conducted. 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≥ 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.
عينات اللبن الخام لكل المعاملات خُزنت لمدة ساعتين، ساعتين، ثلاث ساعات، أربع ساعات وخمس ساعات، في درجة حرارة الغرفة. تم التحليل الكيميائي (الدهن والبروتين الحموضة والأس الهيدروجيني والمواد اللاذنوية والرماد) والميكروبي (العد البكتيري) لعينات اللبن الخام المختلفة.

اظهرت النتائج بان مستخلص الترمس له اثر معنوي على البروتين، الدهن، المواد الصلبة اللاذنوية والاس الهيدروجيني، بينما لا يوجد اثر معنوي على درجة الحموضة والرماد لعينات اللبن الخام. وايضا اثرت فترة التخزين معنوي على الدهن والاس الهيدروجيني ودرجة الحموضة في اللبن الخام، بينما لم تؤثر على البروتين والمواد اللاذنوية والرماد. وكمما اظهرت النتائج بان المحتوى الميكروبي تأثر معنوي بازدهار مستويات مستخلص الترمس لعينات اللبن وكذلك اثرت فترة التخزين معنوي على المحتوى الميكروبي لعينات اللبن الخام.