

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

﴿ الْمَالُ وَالْبُنُونَ زِينَةُ الدُّنْيَا وَالْباقِيَاتُ

﴿ الصَّالِحَاتُ خَيْرٌ عِنْدَ رَبِّكَ تَوَابًا وَخَيْرٌ أَمَلًا

صدق الله العظيم

سورة الكهف الآية (٤٦)

## *Dedication*

**To...**

*These 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 These who gave me the meaning of live... And suffered a hardship for me.*

*My beloved mother...God give you health and wellness*

**To..**

*Source who gave without giving anything in return..The symbol of sacrifice and redemption...*

*My father...God give you satisfaction in the live*

*To..Source that give me hope in despairs moment,  
My husband, daughter,brothers and sisters...*

*I have to say*

*My tragedies are feeling powerless to express facts in a way that make me satisfied.. and about all of you beloved, its my weakness was 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. AlazizMakkawi**, for his kind support, supervision, guidance, valuable recommendations and continuous encouragement through my hardest times.*

*I am also very grateful to Animal production department staff and laboures for their help in providing facilities.*

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

*Special thanks of appreciation are due to all the Doctors, Nurse and technical staff of Alshak Ali fadol Hospital for all the help they provide to me to achieve this work with success.*

## **Abstract**

The present study was undertaken to comparative the nutritive value of human and Nubian goat colostrums during the first three days after parturition and to verify the effects of colostral days and parity order on colostrums composition, The study was conducted at two different sites, the hospital of ELshkfadol in Omdurman and Sudan university dairy farm. six lactating goats three on second parity and three on third parity were selected .six mother three mothers on second parity and three mothers on their third parity a total of 36 colostrums samples were collected to represent the different parities, the three colostrums days. The result revealed significance differences in chemical composition between the two species. Goat colostrums recorded higher percentage in fat, CP, Ash, TS and T.N.F. Lactose and moisture were significance higher in human colostrums. No significance in ash constituent, acidity and PH (Physical composition).In both species the first colostrums day samples significant secured the highest in fat, cp, ash, .N.F, and in TS. While the lactose, moisture component showed a vise verse trend. The parity order exerted different effect on colostrums quality of the two Spp. In both Spp. colostrums showed non significance in acidity (physical composition).

## دراسة مقارنة بين سرسبو أم الإنسان والماعز النبوي في القيمة الغذائية خلال الثلاثة أيام الأولى بعد الولادة

### المستخلص:

اجريت هذه الدراسة لتقدير مكونات السرسبوب الكيميائية والفيزيائية في الإنسان والماعز النبوي مع دراسة اثر فترة السرسبوب وعدد الولادات. اجريت الدراسة في موقعين هما مستشفى الشيخ على فضل في امدرمان ومزرعة جامعة السودان بقسم الانتاج الحيواني بشمبات تم اختيار ستة امهات ثلاثة منهم في الولدة الثانية والثلاثة الاخري في الولدة الثالثة وايضا تم اختيار ستة ماعز في ترتيب الولادة الثانية والثالثة. جمعت ٣٦ عينة من السرسبوب وتم تحليلها تمثل الولادات المختلفة، وفترة السرسبوب في الثلاثة أيام الاولى بعد الولادة اووضحت النتائج فروقات معنوية في المكونات الكيميائية ولا يوجد فروقات معنوية في الحموضة والـ PH في الفصيلتين تميز سرسبوب الانسان باحتواه على نسب اعلى معنوية في الرطوبة و سكر اللاكتوز فيما يتميز سرسبوب الماعز في البروتينات ، الجوامد الكلية ، الدهون ، الاملاح والجوامد الكلية الدهنية. دلت النتائج ايضا تميز سرسبوب اليوم الاول بعد الولادة باحتواه علي تركيزا اعلى معنوية في البروتين ، الدهن ، الاملاح ، الجوامد الكلية والجوامد الكلية الدهنية. مقارنة باليوم الثاني واليوم الثالث بينما كان تركيز اللاكتوز والرطوبة ادنى معنوية في اليوم الاول وتصاعدة تركيزه في الايام التالية . اما ترتيب الولادة المختلفة فقد اتضح عدم وجود فرقات معنوية علي مكونات السرسبوب في الفصيلتين.

### *LIST OF CONTENTS*

الآية .....	i
-------------	---

<b>Dedication.....</b>	<b>ii</b>
<b>Acknowledgement.....</b>	<b>iii</b>
<b>Abstract.....</b>	<b>iv</b>
<b>مستخلص البحث .....</b>	<b>v</b>
<b>List of content .....</b>	<b>vi</b>
<b>List of table.....</b>	<b>xi</b>
<b>List of Figures.....</b>	<b>x</b>
<b>Chapter One</b>	
Introduction.....	1
<b>Chapter Two</b>	
2. literature review .....	3
2.1 Sudanese Nubian Goats.....	3
2.2 Colostrum definition.....	4
2.3 colostrogenesis.....	4
2.4 Physical properties of colostrum .....	4
2.5 Colostrum Chemical Composition.....	4
2.5.1 Water.....	5
2.5.2 fat.....	5
2.5.3 protein.....	6
2.5.4 lactose .....	7
2.5.5 Total solids.....	7
2.5.6 Minerals.....	7
2.5.7 Vitamins.....	7
2.6 Transfer of Passive Immunity in Humans.....	10
2.7 GoatsClostrum.....	12
2.8 Colostrum quality.....	14
2.9 Colostrum preservation.....	15
<b>Chapter Three</b>	
3. Material and method.....	16
3.1 study site.....	16
3.2 Chemical analysis of colostrums.....	17
3.2.1 Determination of moisture content.....	17
3.2.2 Fat content.....	17
3.2.3 Protein content.....	17

3.2.4 Lactose content.....	18
3.2.5 Total solids (TS ) Content .....	19
3.2.6 Solids-non-fat content.....	20
3.2.7 Ash content.....	20
3.3 Physical analysis.....	20
3.3.1 Titratable acidity.....	20
3.3.2 Determination of PH -value .....	20
3.4 Statistical analysis.....	21
<b>Chapter Four</b>	
4. The results and discussion.....	22
Effect of Species on Chemical composition of colostrums during the first three days after parturitions .....	22
Illustration the chemical composition colostrums in human and goats ....	24
Effect of Colostral days on the Quality of the Goat colostrums during the first three days after parturition.....	25
Effect of colostral days on the Quality of human colostrum during the first three days after parturition.....	27
Effect of party order on colostrums chemical composition of human during the first three days after parturition.....	29
Effect of parity order on colostrums chemical composition of goats during the first three days after parturition.....	31
<b>Chapter Five</b>	
Conclusion .....	33
Recommendations.....	34
References.....	35