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Exploration of the Contents and Features of Milk from Various Natural Sources

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ABSTRACT

Milk is a significant benefactor in improving food supplements and safety, especially in the developing nations. The quiets of milk in mammalian populations vary greatly with cite to physiological, genetic, and nutritional parameters. Knowing the diverse value added in the milk food level as a nutrient helps, not only to estimate the nutritional ratio of milk, but also helps in defining market strategies for different categories of consumers; expanding children, nursing mothers, youths, or old age people engaged in hard work. The consumption of goat, camel, cow, buffalo milk has gained global acceptance and significance throughout the globe, while the consumption of horse milk is admired only by global people. Goat's milk is an option suggested by many prescribers for babies, those who are intolerant to cow's milk, and those who are hypersensitive to cow's milk. Goat's milk is more beneficial for that suffering from acidity, asthma, eczema, migraines, colitis, stomach ulcers, digestive disorders, hepatic and gallbladder disorders and stress-involved symptoms like insomnia, hard stools and nervous indigestion. In a few people with digestive disorders, goat milk can be early ingested. Milk of camel is an emerging origin of casein for people living in the drylands of the world is believed to have anti-cancer, non-toxic, and anti-diabetic features. The milk from Buffalo is a universal food that can be ingested like other types of milk and it a major component from a rational view point and is featured by high lipids, total solids, protein, Ca, and lactose and ash content than cow, goat, buffalo, camel and mammalian milk. The main components of buffalo milk are denser than cow, & goat milk. What's more to its benefits as a major fount of nutrition, a latest study has focused that people with cow's milk hypersensitive are able to sanction buffalo milk. Consequently, this review aims to explore the quiets of milk and create awareness about the accessibility of numerous origins of milk.

Keywords: Exploration, Milk, Contents, Animals, Nutrition, Sources, Enzymes, and Features.

INTRODUCTION:

The milk is a necessary subsidizer to improving nutrition & dietary safety, especially in developing countries. The advancement in livestock sciences and milk standard hold the greatest promise for reducing world malnutrition & poverty. Biochemically, milk can be described as an aqueous preparation of sugar that mimics mine salts with fat & protein in colloidal suspension. In terms of nutrition, when various milk goods are not ingested in adult years, it can cause

bone loss in the women body to pick up the required amount; this significant nutrient must be ingested in milk & their products (Gamal, 1999). Milk contents of mammal strains vary greatly with genetic, physiological, environmental parameters and nutritional factors. The utilization of milk casein to impart desirable organoleptic or textural assets to foods is strongly affected by their functioning assets. Ease of use is clarified as any features of a food or food ingredient, other than its nutritional value, that affects its use. Whey protein makes up about 19.9% of milk protein casein by weight. The quiets of milk fat vary greatly between different strains due to hereditary, lactational & nutritional differences (Harold & McGee, 2004).

The casein content of sheep & buffalo milk is higher than that of women, goat, cow, & camel milk and it has been found that sheep milk has larger fat content than the other four types of milk, while horse milk has larger fat content cow's milk. The lactose content of women milk is higher than that of goat & sheep milk, but the lactose content of cow and camel milk is 4.6% & 4.8% respectively & women milk has lower ash content than cow & camel milk, but camel & cow milk have similar ash content. Whereas, the ash ratio's of goat & sheep milk is 0.56% & 0.88% respectively.

Sheep's milk has lower moisture content than women, goat's, cow's & camel's milk. At-present, there is substantial interest in using horse milk for people consumption in Europe and it has been instructed that milk of mare's can be a healing agent for allergic and metabolic disorders and as a result, the price level for mare's milk has gradually increased severely. This instructs a new potential for income generation from horse farms. It also instructed that study is entailed to assess the ratio of horse milk as a baby food.

Major objectives of the research study

- Evaluation of physical & chemical differences between milk of women, goats, cows, camels, buffaloes, horses, donkeys and sheep.
- The contents of milk vary between strains and within strains of various animals.
- To convoy users to incur pick out the better milk for their health, nutritional ratio of milk & readiness of livestock's for consumption.

Composition of Mineral Ratio in Female Milk

The mature female milk holds 2.9%-4.9% fat, 0.79%-0.89% protein, 6.8%-7.1% lactose calculated and 0.22% mineral content focused as ash. Protein intake does not change recurrently during lactation time, but focusing vast diurnal diversity & increases during each nursing period. The race, parity, age, or diets do not largely affect milk contents and no difference between two breast milks except if one is overdone.

Proteins contents

The main proteins in female milk are casein & whey protein. Female milk found low casein like protein, which is good for digestion, immunity and allergies; with type-1 diabetics, and higher whey casein than cow's milk which makes female milk better for babies. The essential amino acid structure of female milk nearly resembles that thought to be nifty for the female infant. Female milk holds more lactose and less casein than cow's milk because the volume of casein in milk is same to how long it takes for those particular strains of animal to grow to size. Hence, growing calves need large casein to entitle them to grow rapidly, but female need low casein and fatter, especially poly-unsaturated fats, for the reason that their power is primarily spent on spinal cord, brain, and nerve development (Islam *et al*., 2020).

Lactose contents

The main sugar in women milk is disaccharide such as lactose and the mass lactose is put in place in women milk. Either may act to regulate the intestinal flora due to their capability to enhance the growth of several strains of lactobacilli (Zicarelli, 2004b).

Fat contents

The ratio and class of fat exist in milk likewise reflect the prerequisites of the strains of animal producing that milk. Cow's milk holds high saturated fats while women milk holds more un-saturated fats, which are paramount for babies' brain development and female milk in particular has a high level of palmitic and oleic acids (Jenness, 1986; Islam *et al*., 2020).

Mineral contents

The major minerals in women milk are K, Na, Mg, Ca, & Cl, etc. The Ca content of cow's milk (121 mg per 100 ml) is 4 times that of women milk (35 mg per

100 ml). In view of the fact that calves enlarge much faster and shows a big frame than women babies and inasmuch as require large range Ca than women's and cow's milk contains very little Fe.

Vitamin contents

All vitamins; Except for vita K, women milk contains nutritionally significant concentrations, but cow's milk contains less vita C, vita D & less vita A than women milk (Emmett & Rogers, 1997; Zicarelli, 2004b).

Characteristics and Contentment of Goats Milk

Goat's milk is prescribed by many doctors for infants who are sensitive to cow's milk & is an alternative for those who are allergic to cow's milk (Saini & Gill, 1991). About 40% of patients sensitive to cow's milk casein tolerate goat's milk casein. Goat milk is very beneficial for those suffering from acidity, eczema, asthma, migraines, colitis, stomach ulcers, digestive disorders, liver & gallbladder disorders & stress related symptoms like insomnia, constipation & nervous indigestion. These patients can turn to goat milk & its products to solve their problems in future. Goat's milk is easy to digest because of its natural homogenization, which is superior to mechanical homogenization of cow's milk. This is because goat milk takes about 21 percent less time to digest because its fat globule size varies from 0.2 to 11 microns, with the larger proportion being less than 1.9 microns, while the same is true for cow's milk.

Fat contents

The higher proportion of butterfat gives goat's milk more energy per unit volume than cow's milk. Fat is a concentrated source of energy & in general, one unit of fat contains 2.5 Many times more energy than a unit of lactose (Zicarelli, 2004b).

Lactose contents

The lactose content of goat milk is slightly lower than that of cow milk. Lactose is milk sugar & the carbohydrate nutrient in milk. Since some people have difficulty digesting lactose in milk, goat's milk is less likely to cause this problem than cow's milk. For making yogurt, goat's milk's low lactose yields a less acidic & more palatable product than cow's milk, which does not require fruiting or flavoring (Yousif, 2006).

Protein contents

There is no significant difference between cow's milk & goat's milk casein. However, the physical properties of renin (the main enzyme secreted from the newborn's stomach) in the curds that these casein produce are significant. Generally, the softer the curd, the easier it is to digest. Cow's milk curd is firmer than goat's milk curd. Size also has something to do with its digestibility, & cow's milk curds are larger & dissolve more slowly (Elliott *et al.*, 1999). Goat's milk fine curd dissolves more quickly. This means that for some people with digestive problems, goat's milk can be easily digested (Islam *et al*., 2020).

Minerals contents

Goat's milk generally contains more calcium, phosphorus, chlorine, magnesium & potassium than cow's milk or women milk. The phosphorus content of goats milk helps women's survive on a diet of root crops, fruits & green vegetables. It also contributes to the superior buffering capacity of goat's milk, which makes it valuable in the treatment of stomach ulcers. High chloride content may have some effect on laxative properties (Aliaga *et al*., 2000).

Vitamins contents

For adult milk drinkers, goat's milk provides almost twice the vita A of cow's milk. Vita B is related to nerve regulation & women needs for this vitamin are thought to increase with intake of sugar & other lactose; there is some evidence that it plays a role in casein digestion & metabolism. Goat milk contains 50.5% more vita B than cow's milk & four times more than women milk. Goat's milk is very high in vita B2, which affects growth. Cow's milk or goat's milk do not contain sufficient amounts of vita C, & D, & any infant who is bottle-fed will need supplementation (Elliott *et al*, 1999; Zicarelli, 2004b).

Differences in Breed

The contents of goat milk vary both within & between breeds, as it does for cows. Milk of the Sanen & Toggenberg breeds is similar to Holstein cow milk in water, lactose, fat, casein & ash percentages, although it is subject to greater variation with lactation progress than Holstein or Jersey cow milk. Toggenbergs are often known as the Guernsey of the goat family because they produce large amounts of milk. Nubians

generally produce less daily milk than other breeds, but their milk contains more butterflies. Still, like cow's milk, goat's milk is a healthy & nutritious food (Elliott *et al.*, 1999).

Characteristics & Contents of Camel's Milk

Data in the literature mainly concern cow's milk, which represents 86% of the world's milk, & to a lesser extent goat & sheep milk. Camel milk has much more variation in ingredients than cow's milk. Camels are known to produce thin milk in hot weather when water is scarce. The difference between cow & camel milk lies in the different physiochemical properties of the individual components (casein, lipids & ash, etc). Studies on other dairy animals (buffalo, yak, horse & camel) are scarce despite their nutritional interest. Camel milk needs to be investigated in this context. There are only a few references to camel milk production (Faye, 2005) or compositional aspects (Farah, 1993). Yet camel milk is an important source of casein for people living in the world's arid lands. In addition, camel milk is known for its medicinal properties, which are widely exploited for women health in various countries (Kenzhebulat *et al.,* 2000; Mal *et al*., 2006).

The milk of camel believed to have anti-cancer (Magzid, 2005), hypo-allergic, & anti-diabetic properties (Agrawal *et al*., 2003). The high value of un-saturated fatty acids contributes to its overall nutritional quality (Konu-Spyeva *et al*., 2008). Tiny amount of casein & lack of lactoglobulin were associated with hypo-allergic action of camel milk and other components, such as lacto-ferrin, immuno-globulin, lysozyme or vita C, are well known to handle a central role in determining these features (El-Agamy *et al.,* 1996).

Casein like Protein contents

Casein protein represents one of the main components of milk for women nutrition. They execute a variety of functions in living organisms, from formation to reproduction. The main components of milk casein are casein & whey. Casein is available in products other than milk. Casein is precipitated when milk is soured or acid or rennin is added. Most of the casein in cheese making is recovered from milk fat. Camel milk has lower value of casein & higher value of whey casein than cow's milk (Zicarelli, 2004b).

Fat contents

Milk fats serve as a nutrient as an energy source, serve as a solvent for fat-soluble vitamins & provides essential fatty acids. The fatty acids are divided into saturated & un-saturated fatty acids in accord to the length of the carbon atoms. In the saturated fatty acids, carbon atoms are linked in a chain by a single bond & in un-saturated fatty acids by one or/and more double bonds. A large range of fat in milk exists in the form of globular globules of various sizes. The outer layer of these fat globules is covered by a thin layer known as the fat globule membrane, which acts as an emulsifying agent for the fats suspended in the milk. Protects membranes and prevents globules from aggregating into butter granules & can be broken by mechanical action. The fat quiet of camel milk varies between 2.8 & 5.3 percent, & the average size of fat globules is similar to that of cow's milk fat globules (Farah, 1993; Shabo *et al*., 2005).

Lactose contents

The lactose is the key lactose fraction of milk & is an energy source for young calves and made of two sugars, glucose & lactose, which ferment into lactic acid when the milk turns sour. The lactose content of camel milk is 4.9%-5.9% & slightly larger than that of cow's milk. Lactose content appears to be relatively constant in camels during lactation (Islam *et al*., 2020).

Vitamins, Mineral, and Salt

Mineral salts in milk are mainly Cl-, PO_4^{3-}, & citrate of Na magnesium. Although salts make up <1% of milk, they affect its coagulation rate & other functional properties and there is still very little information about the mineral quiet of camel milk. Available data, however, indicate that camellia is rich in chloride & phosphorus & low in calcium (Mehaia *et al*., 1989). Camel milk quiets less vita A, B1, B2, E, folic acid & pantothenic acid compared to cow's milk while having almost the same amount of vita B6 & B12. Niacin & vita C quiet is significantly higher than cow's milk. In particular, camel's high levels of vita C have been confirmed in multiple studies (Farah, 1993).

Characteristics and Quiets of Buffalo's Milk

The buffalo milk is a universe good that can be con-

sumed like any other milk and one of the richest products from a formational point of view & is characterized by higher fat, total solids, casein, casein & lactose & ash content than cow, goat, camel & women milk. Differences in quiet of buffalo milk in different areas reflect differences in breed, management, feeding & environmental conditions (Sheehan *et al.,* 2009). The main components of buffalo milk are denser than women, cow, goat & camel milk in terms of nutritional quality. Along with to its benefits as a good source of nutrients, a nearest study by (Sheehan *et al*., 2009) focused that individuals with cow's milk allergy are enable to resist buffalo milk. Buffalo milk can contain almost all the prominent compounds exist in other milks, such as casein, peptides, fatty acids, vitamins & other bioactive compounds. Buffalo milk is higher in total casein, medium chain fatty acids, & retinol & tocopherol content than cow's milk, & some parameters may only be exist in buffalo milk, such as certain classes of gangliosides (Berger *et al.,* 2005).

Proteins contents

The buffalo milk is high in casein than cow's milk and of the sum casein in buffalo milk, ~81% is casein & ~21% is whey casein with traces of minor casein. Colostrum is larger in whey casein & minor casein than mature buffalo milk (Ahmed *et al*., 2008).

Fat contents

The buffalo milk is almost twice as rich in fat compared to cow milk & is the most significant fraction responsible for its high strength & nutritional value (Varrichio *et al*., 2007) focused the fact that the average value of fat content is 8.3% but can reach up to 15% under normal conditions (Medhammar *et al*., 2011) also found interbreeding differences in total fat content as well as mineral content in buffalo, horse & dromedary camel milk. The buffalo milk fat quiets more tetradic & pentanoic but less dianoic & trienoic fats than cow milk fat. Buffalo milk fat has a higher melting point, density, specific gravity, & saponification value, but low refractive index (RI), acid, & iodine values than cow milk fat, although they are affected by level of lactation, season, diet, & thermal oxidation. Lipid levels (total & free) in buffalo milk appearance to be smaller than cow's milk (Zicarelli, 2004b).

Lactose contents

Lactose is a type of hydrates composed of glucose & galactose in buffalo milk like other milks and comparison to cow, goat, sheep & camel milk, buffalo milk is a rich origin of lactose & therefore a good origin of energy for body functions, especially brain & hormone regulation. Before the body utilizes it, the bonding must be broken down by catalyst lactase in the small intestine. People with reduced lactase activity in the small intestine may have problems digesting lactose & this is called lactose intolerance. Due to its high concentration, buffalo milk is more likely to cause such problems, but no such phenomenon has been observed with cow's milk, which may be due to different redistribution of lactose in buffalo milk. Cow & goat milk have very low levels of oligosaccharides, comparing to buffalo milk. The low concentration of oligosaccharides in cow's milk & colostrum has limited their use as biologically active ingredients in the healthcare & food sectors, but this opens the door for milk & buffalo colostrum to have oligosaccharide levels comparable to women milk (Urashima *et al.,* 1997; Islam *et al*., 2020).

Minerals contents

The buffalo milk has been existed to contain more minerals than cow milk (Cashman, 2002). The biochemical form in which a macro-mineral & trace element is found in milk or other foods and supplements is important, as it will affect the degree of intestinal absorption & utilization, transport, cellular transport & conversion to biologically active forms, & thus bioavailability. Buffalo milk is high in calcium than cow, goat & camel milk. Most Ca is found in insoluble form mainly due to the high casein content of buffalo milk (Ahmed *et al*., 2008). The secretion of some trace elements appears to be influenced by hormones such as oxytocin administration, which increases copper & manganese content & decreases magnesium, Fe, & Zn content in buffalo milk without changing the Ca concentration (Sheehan *et al.,* 2009).

Enzymes contents

Milk quiets numerous small casein that has physiological effects and this small casein include enzymes, metal-binding caseins, enzyme inhibitors, vitamin binding casein, & numerous growth factors (Fox, 2001). Lysosome is a key protein enzyme with a low-

MW and important contributors of the anti-bacterial reservoir in the buffalo milk (Priyadarshini and Kansal, 2002). Buffalo colostrum has more than five times the lysozyme activity and high specific activity than the mature cow's milk lysozyme. Buffalo milk lysozyme is active over a wide range of pH. Lysozyme activity in buffalo milk was not affected by parity & stage of lactation; no matter how, it increases during extreme weather in winter & summer (Priyadarshini & Kansal, 2002a). Higher lysosome activity in buffalo milk is one of the factors responsible for the low incidence of ruminal infections in buffaloes. Buffalo calves receive more lysosomes in first several days after birth in colostrum, which shows five times more lysosome activity than mature milk, which is one of the main factors in preventing intestinal infections (Priyadarshini & Kansal, 2003). Lysosomes in buffalo milk are more stable during storage & heat treatment than cow milk (Priyadarshini & Kansal, 2002b). Buffalo milk lysosomes were found to completely stable (El-Dakhakhny, 1995), whereas cow milk lysosomes were partially inactiveted by pasteurization. Lactoperoxidase is the most abundant enzyme found in buffalo milk. Lactoper-oxidase has antimicrobial properties & due to its broad biocidal & biostatic an activity, lactoperoxidase has exist's many finincial applications, generally targeting oral pathogens (Tenovuo, 2002).

Vitamins contents

Buffalo milk quiets only traces of carotene, but more vita A than cow's milk. Feeding cottonseed to buffaloes increases the vita A content of their milk fat. Heating milk decreases its vita A (El-Abd *et al*., 1986). Several studies have shown that buffalo milk quiets more ascorbic acid (vita C) than cow milk. Buffalo milk quiets less riboflavin than cow milk (Aliaga *et al*., 2000).

Characteristics & Contents of Ass Milk

Cow's milk casein intolerance is the most continual food intolerance in childhood, occurring in 0.3 to 7.6% of the pediatric population (Carosio *et al*., 1999). In such instances, when breastfeeding is not possible, a cow's milk-free diet often resolves symptoms, although some infants may visualize intolerance to substitute foods (Carroccio *et al*., 2000), including formulas existing soy or hydrolyzed casein (Iacono *et al*.,1992). Very recent clinical analysis sure that donkey milk feeding is a safe & valid treatment for the most complex cases of several food intolerances.

However, information on the contents of donkey milk is more shorten than that of mare's milk (Doreau *et al*., 1989), which has also been studied as an infant food (Businco *et al.,* 2000). To boot, recommends the use of the donkey's milk, although rich in medium-chain triglycerides; Cow's milk-free diets in infancy have better taste than semi-basic milk formulas, similar contents to women milk & its hormonal peptides, which stimulate functional recovery & development of the gut. Into the bargain to peptides giving growth & protective parameters, substances with bio-active features are also finding out in the milk lipids (Oftedal *et al.,* 1988). The role of dietary fats in food-related allergic symptoms deserves special attention (Kaila *et al*., 1999). Donkey's milk, due to its recognized benefits in infant nutrition, has been known since prehistoric times for its dietary & therapeutic properties (Sheehan *et al.,* 2009).

Related Enzymes and Casein Protein

Mean casein quiet, consistent with data focused for donkey milk and highlighted in horse milk by (Doreau *et al*., 2002) was not significantly affected by milking time, breed or year of lactation. On the flip side, casein content varies significantly during lactation, as noted by others in a study of nursing Haflinger mare milk (Mariana *et al.,* 2001). By comparing the casein migration pattern with that of mare's milk (Pagliarini *et al*., 1993) it was possible to identify the following whey casein: lactoferrin, serum albumin, β-lactoglobulin, lysozyme & α-lactalbumin. The casein fraction shows different sensitivities to temperature, as also observed for horse milk (Ochirkhuyag *et al*., 2000). In the existence of α-like casein, β-like casein, & γ-like casein has been reported (Iametti *et al*., 1998) in ass's milk. Among the potentially allergenic milk components, it must be noted that the observed percentage of β-lactoglobulin was much lower than in cow's milk, where β-lactoglobulin can be up to 50% of the total whey casein (Solaroli *et al*., 1993). Furthermore, β-lactoglobulin levels in donkey milk were equal to or lower than mare's milk (Martuzzi *et al*., 2000). Other authors have found a lower β-lactoglobulin content in

horse milk than in cow or even donkey milk (Civerdi *et al*., 2002). These results, along with the lower casein quiet, are probably related to the hypo-allergenic properties reported for both donkey milk & horse milk (Curady *et al*., 2001); β-lactoglobulin is actually the major potential milk allergen in infants & young children, but casein is considered the major allergen in adults (Carroccio *et al*., 1999). Anyhow, the occurrence of genetic variants for donkey milk lysozyme & β-lactoglobulin has been written in the literature (Herrouin *et al*., 2000). A key difference in whey casein contents between horse & donkey milk is evident when the lysozyme percentage is considered: the average lysozyme in donkey whey casein is actually much higher than in horse milk (Malacarne *et al*., 2002), whereas traces were found only in bovine milk (Solaroli *et al*., 1993). Donkey milk is guaranteed to be rich in lysozyme (Civardi *et al*., 2005). According to these end authors, donkey milk focused an optimal culture media for certain strains of beneficial lactic acid bacteria (Coppola *et al*., 2002).

Fat contents

The mean fat quiet of donkey milk was similar to the values observed in mare's milk & the wide vari-ability of fat quiet was consistent with previous observations of mare's milk (Salimi *et al*., 1996). In particular, fat quiet is not affected by breed but does affect milking time. No beneficial differences were focused in the individually variable fat quiet of milk during lactation. Similarly, horse milk data did not show marked variation in lipid quiet (Mariani *et al*., 2001).

Lactose contents

The higher level of lactose was consistent with values reported for mare's milk (Mariani *et al*., 2001). Lactose quiet of donkey milk is not affected by breed, mil-king time, year & stage of lactation. Observations suggest that the low energy quiet of donkey milk is associated with a high value of milk to meet the nutritional requirements of the calf for its rapid cultivation.

Minerals contents

The rapid growth of newborn calves also requires sufficient mineral quiet in milk: in this regard, the ash quiet of donkey milk corresponds to the data of horse milk, which is not affected by year, stage of lactation, breed & time of milking. Macro-nutrient concentrations in donkey milk were also recurrent with data revealed in the literature for quid milk (Schryver *et al*., 1986). Regarding the renal load of solutes in donkey milk, the observed values of mineral quiets were closer to women milk than other milks, except for higher absolute levels of Ca & phosphorus (Bailey, 2001). However, the calcium/ phosphorus ratio of donkey milk is between the low values of cow's milk & the high values of female milk (Pagliarini *et al*., 1993). The results for the nitrogenous quiet of donkey milk are very close to the values of women & horse milk (Malacarne *et al*., 2002). The nutritional & natural value of significance of this milk fraction is still not fully understood, but appears to be related to infant development (Emmett & Roger, 1997; Islam *et al*., 2020).

Contents of Mare's Milk

Presently, there is appreciable interest in using horse milk for female consumption in Western country and has been suggested that horse milk can be a curative agent for metabolic & allergic diseases & as a result, the price paid for horse milk has enlarged greatly. This instructs a new potential for income generation from the horse industry. It also suggests that research is needed to assess the value of horse milk as a women food. Much of the previous research on mare's milk contents was directed at evaluating the milk's value as it relates to foal nutrition. The duration of lactation was reported to be 4 to 7 months & the estimated milk yield was 2001-3001 kg. During a single milking, the contents of milk changes, so mixed milk must be sampled. Butterfat content undergoes the greatest change & may be 11 to 21 times greater at the end of lactation than at the beginning. Sampling method & milking interval affect milk contents. The content of mares' colostrums has been analyzed by many authors. Cows have a much shorter colostral period than cows, & colostrum shows significant differences from normal milk only on the first day after foaling. The dry matter content of mare's milk is greatly reduced from colostrum to normal milk, primarily due to reduced casein content; Fat content & fatty acid composition of milk fat show little change over time. Horse milk is very low in fat content (Doreau *et al*., 1988). Though, it can be

affected by the environment & can range from 0 to 7.8%. Estimate of the fatty acid contents of horse milk butterfat showed that it contained very small amounts of stearic & palmitoleic acids & high amounts of linoleic & linoleic acids. This can be explained by the fact that un-saturated fatty acids are not hydrogenated in the digestive system & horses eat a lot of forage, which is rich in unsaturated fatty acids and among the factors affecting milk contents, the stage of lactation is the most important, but the stage of lactation can affect the fatty acid contents of milk fat. Most authors did not report breed affecting milk composition, but reported a significant effect of breed and increasing the fat quiet of the feed did not increase milk yield & did not change milk contents, unlike the effect on cow's milk (Doreau *et al.,* 1988). Others have found milk fat quiet associated with higher fat intake (Davison *et al*., 1987; Aliaga *et al*., 2000).

Characteristics & Quiets of Cow Milk

Cows are the world's most popular dairy animal, providing essential nutrients & providing an important origin of dietary energy, high-quality casein & fat (Saini & Gill, 1991). The contents of cow's milk vary depending on breed, feed, stage of lactation, genetics, & physical & environmental factors and a special type of milk called colostrum is secreted which is rich in fat & casein. Colostrums also contain important infection fighting antibodies, which strengthen the immune system of young mammals and the transition from colostrum to true milk exist within days of birth. Cow's milk is yellowish in color compared to goat's & sheep's milk due to the presence of beta-carotene in cow's milk (Clarence *et al*., 2004).

Water contents

All of the milk produced by animals contains lactose, casein, fats, minerals & vitamins, but the main component is water and water dilutes the milk & allows it to be excreted from the body; it is impossible to express milk without water. Additionally, milk water is essential for newborn hydration. Cow's milk has about 88% water content as women milk (Clarence *et al.,* 2004).

Lactose contents

The main lactose in mammalian milk is a disaccharide called lactose and for lactose to be digested it must be broken down into its component monosaccharides glucose & galactose by the enzyme lactase in the intestine and glucose can then provide energy to the young animal. Several people don't to consume cow's milk & dairy products because they are unable to digest lactose after absorption. Most babies have the lactase enzyme & can therefore digest lactose, but this ability is lost in many people after weaning (usually after the age of two). Lactose intolerance is very common in global terms, about 91-101 percent of Asians, 66-71 percent of Africans, but only 11 percent of Caucasians (Robbins, 2001). Therefore, many of the world's population is unable to digest milk after spreading.

Protein contents

Casein provides energy & is necessary for the growth & repair of tissues such as skin & muscles. Casein is the primary group of casein in cow's milk, making up about 81 percent of the total casein content. The rest is made up of whey casein and four (4) types of casein (al-pha-, beta-, gamma-, & kappa) combine to form a structure known as a casein micelle and micellar frm of casein is important in cheese production; it also plays an important role in cow's milk allergy (Carroccio *et al*., 1999).

Fat contents

The main fats in milk are a complex attachment of lipids called triglycerides (Tg). Cow's milk quiets more than 401 fatty acids with chain long ranging from four to 27 carbon atoms. The fatty acids are described as saturated or un-saturated depending on the amount of H in the carbon chain of the molecule; Milk quiets both saturated & un-saturated fatty acids. Un-saturated fatty acids can be further classified as mono-unsaturated or poly-unsaturated and again, milk quiets both groups of fatty acids, but most of the fat in whole cow's milk (about 66 percent) is the saturated type (Clarence *et al.,* 2004). Polyunsaturated fats include fatty acids called omega-6 & omega-3 fatty acids. Milk contains the omega-6 essential fatty acid linoleic acid & the omega-3 fatty acid linoleic acid and called essential fatty acids because they are essential for health but cannot be made in the body & must therefore be obtained from food. Although milk contains linoleic acid & linoleic acid it

does so in relatively lower amounts (Saini & Gill, 1991).

Vitamins and Minerals

Minerals found in cow's milk include Na, K, Ca, Mg, P and Cl-, Zn, Fe (although in extremely low amounts), Se, I & trace amounts of Co & Mn. Vitamins in cow's milk include retinol, beta-carotene, vita E, thiamin, & riboflavin, & niacin, traces amounts of vita B6, vita B12, folic acid, pantothenic acid, biotin, vita C, and vita D). Although cow's milk quiets all these nutrients, it is important to note that these vitamins are present in very small amounts. Furthermore, minerals are so out of balance with women chemistry that it is difficult for us to absorb the optimal amounts needed for health.

CONCLUSION AND RECOMMENDATIONS:

The contents and nutritional net of milk varies from mammal to animal due to physiological, environmental and feeding habit differences and women milk contains more lactose and less casein than cow's milk, especially lower amounts of casein, which is easy to digest, and higher amounts of whey protein than cow's milk. Women milk is high in un-saturated fats which are important for the brain growth of babies but cow's milk is high in saturated fat & four times more calcium than women milk but cow's milk is very low in iron which makes it un-suitable for brain development of babies. Children under one year of age & all vitamins; except for vita K, female milk contains less vita C & D in cow's milk & less vita A than women milk. Goat's milk is also important for babies who are sensitive to cow's milk & is beneficial for people suffering from acidity, eczema, asthma, migraines, colitis, stomach ulcers, digestive disorders, liver & gall bladder diseases. Goat's milk is easy to digest because of its universe homogenization, which is superior to mechanical homogenization of cow's milk. The camel milk is an important origin of casein for people living in the drylands of the world & is known for its medicinal properties, which are widely used for women health. It is believed to have anti-cancer, non-toxic, & anti-diabetic properties. The quiets of buffalo milk are higher in density than women, cow, & goat and camel milk. Clinical reports confirm donkey milk as a safe and valid treatment for the most complex cases of multiple food intolerances, & donkey milk is recommended because it tastes better than semi-primary milk formulas; Similar quits to female milk. Horse milk is also recommended as curative agent for metabolic & allergic diseases, & the un-saturated fatty acids are not hydrogenated in the digestive tract, which is why horses eat so much forage. Cows are the world's most popular dairy producing animal, supplying essential food dietary & an important source of dietary energy, good quality casein and fat. Therefore, there are some following recommendations are forwarded in line with the below conclusion and the utilization of milk for women consumption was supposed to maintain the aesthetic value of the society and also better to improve the feed management & breed of dairy animals to get higher quality of milk.

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The author(s) declare that there are no potential conflicts in publishing the present review study.

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