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# **IMPORTANCE AND THERAPEUTICAL VALUE OF TRADITIONAL FOOD - PASGORASA IN HUMAN GROWTH AND WEALTH DEVELOPMENT REVIEW**

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## **ABSTARCT**

Ahara and vihara which are congenial to the body channels, constitution and strength of human body considered as Pathya (Wholesome) and which is non-congenial is termed as Apathya (Unwholesome). Traditional food systems are certainly a good option, which can overcome emergencies of food insecurity such as famines and droughts or unprecedented occurrences such as COVID 19 pandemic. **OBJECTIVE:** Use the Pasgorasa traditional food in daily routine to prevent the disease. Analyses the significance of the Pasgorasa and therapeutically values of preparing Pasgorasa in traditional method and modern agribusiness practices effects on dairy products. To get high nutritional value should prepare pasgorasa in traditional method by with standard. **METHODOLOGY:** Ayurvedic authentic texts and published articles reviewed and compiled. **RESULTS:** Westernization of diet and lifestyle is associated prevalence of chronic diseases such as cardiovascular, cancer, chronic diseases, diabetes and other Non-communicable diseases. Most significant effects present in cow's milk and cow's milk derived products. Narawada Experimental group eight achieved high improvement using raw milk. With several factors effecting milk quality and milk derived products. Traditionally prepared ghee has high content of DHA. **CONCLUSION:** Modern agribusiness practices that affect

dairy if that cannot treat the diseases as per samhithas. Utilization of this commercially available low nutritional product does not complete body nutritional requirements. Prevalence of diseases especially non communicable diseases increases over the time. To obtain therapeutic value gets or prepares the Pasgorasa in traditional method. Commercial preparations of dairy products should follow the instructions and maintain the quality of milk.

**Keywords:** Pasgorasa, Traditional food, Therapeutic use, Non-communicable diseases

## **INTRODUCTION**

Ayurveda is not just a medical science. Ayurveda is science of life, it explains us how to live our life in good and healthy way. Charaka has mentioned importance of tri-upathambha (ahara, nidra, brahmcharya) which are pillars of life, acceptance of these in suitable and realistic manner helps in sustaining and maintaining our healthy life (Abasaheb and Pramod, 2017). It increases strength, complexion, and nutrition and causes proper growth and development of mind and body (Kaushika et al, 2016). Susruta mentioned that healthy individual is who has equal and homogenous state of dosha, agni, mal, kriya and cheerful mind and soul and senses of his body. WHO (World Health Organization) definition of health

is state of complete physical, mental and social well-being not merely absence of disease or infirmity. Healthy life means according to Ayurveda healthy body along with healthy mind. Mind is similarly important in being healthy.

Charaka have mentioned that sharirika roga and mansika roga can interchange into each other. So if one have healthy body but don't own healthy mind that he may get ill sooner or later. Unhealthy mind can affect our daily life and body gradually. Ahara is main component of this tri-upasthambha. It insists on good and ideal food should be consumed for attaining and sustaining healthy life. We are swastha we eat and for gaining a healthy life we should understand and control what we eat. Based on the dominant constituent of the body, dosha are classified into vata, pitta and kapha (Srikanth, 2016). Tridosha govern all physiopathological, psychological and biological functions of the body, mind and consciousness. Imbalance of tridosha leads to disease or impact on body functions also. The bhagavad gita is saying food has major role in physiological and psychological growth. The gita classifies food into three categories Satvika, Rajasika, Tamasika. Manas also categorized in these three. Manas have all these three gunas, but it is shifts these three gunas frequencies according to the deeds person does frequently. Sativika food increases vitality, energy, health, joy and cheerfulness. Rajasika food produces pain, grief and sadness. Such as bitter, sour, saline, over hot, pungent and dry. Tamasika foods are stale, tasteless, stinky, cooked overnight and impure. Food is related to character development. Each type of foods promotes its quality such as satvika, rajasika and tamasika (Mishra, 2007).

Satvika diets are seasonal fruits, grains, saindhav, milk, honey, regular spices and juicy fruits. One of satvik food is milk and

dairy products gives calories, water protein, carbohydrates, sugar, fiber and fat. It provides two types of protein casein and whey protein. Casein is its ability to increase absorption of minerals such as calcium and phosphorus. Whey protein lowers Blood pressure, elevates mood and excellent for growing and maintaining muscles (Mirunalini, 2010). Ancient people use this pasgorasa to maintain the healthy life style. That became a traditional food system. Processing of food, its preservation, and therapeutic effects has been established for many generations (S. et al, 2019).

Traditional diets stand in sharp contrast to the diet of the last 30 years decade where the obtainability and ingestion of and preference for industrialized and refined foods has conquered the identifies nutritional value of certain elements of the traditional food system affords them in a role in general health and health maintenance. Dietary change from traditional to industrialized foods is the risk factors for the development of various diseases (Sarkar, 2015). United Nations Children's Fund (UNICEF) report in 2017 in South Asia 39% of children under the age of five years have gone stunted growth and nearly three quarter of people became micronutrient deficiencies live in Asia. 22% pregnant woman is considered underweight at the time of registration for pregnancy. Prevalence of intrauterine growth and low birth weight reported (Foods, 2018). According to garbhini paricharya milk is wholesome Ahara complete the requirement of nutrients Clinical studies have proved the efficacy of Ayurvedic antenatal care (Mana, 2021).

Current situation of Pasgorasa preparation is facing lot of problem to complete requirement of the nutrients. Quality of milk is varying due to several factors. Different species of breed, stage of lactation, to increase the profit adding ice also alter the quality. Pasgorasa which is prepared thorough traditional way give

high nutrition to body. It has important vitamins and minerals also (Humayun, 2017).

### **Objective**

Use the Pasgorasa traditional food in daily routine to prevent the disease. Analyses the significance of the Pasgorasa and therapeutically values of preparing Pasgorasa in traditional method evolvement of modern agribusiness practices affecting dairy products. To get high nutritional value pasgorasa preparation should follow traditional method with standard.

## ***LITERATURE REVIEW***

### **Importance Of Pasgorasa**

Farming in Sri Lanka is one of the vital livestock sectors, which is well integrated into the traditional livelihoods of rural dairy farmers. Processed buffalo milk derived dairy food in Sri Lankan food culture. Fermentation of milk is one of the major preservation techniques to preserve the excess milk yield. Origin of fermented milk is dated back to ancient civilization and evolved with culinary skills along with the advances in keeping livestock and agricultural practices. Traditional fermented foods are playing a vital role in socio-economic and cultural development in local communities. Sri Lanka has been renowned for its traditional foods and “Pasgorasa”(five tastes of milk) was made of excess fresh milk included a combination of five items such Milk(Ksheera), Butter(Navaneeya), Curd(Dadhi),Buttermilk(Takra) and Ghee(Ghrita)(Priyashantha et al, 2021).

The research has found annual milk consumption is about 35 liters. Accordingly, consumption of milk and milk products in Sri Lanka is low compared to other South Asian countries (Krishnapillai et al, 2020).Import of milk powder has increased in Sri Lanka over the

years(Nayanakkara, 2013). Per capita fresh milk consumption in Sri Lanka is low. Fresh milk consumption is very substantially low compared to full cream milk powder consumption. Most of the consumers consume tetra packed fresh milk more than three times a week. Age, gender, level of education and income are particularly important factors in determining milk consumption (Kariyawasam et al, 2006).

Human health and food security is major challenge to present situation. Livestock plays an important role in economic, sociocultural and environmental of any nation because it has valued in past history of human culture. Dairy products supply the entire nutrient which required by human growth and development. It contains bioactive molecules; pharmacy therapeutic action against various physiological, metabolic and infectious disorders specially COVID-19 (Prasad and Naresh, 2022). Cattle were an integral part of Vedic culture. Literature before 800 BCE refers to cow, buffalo and goat milk, which were consumed. Sushruta mentions human’s milk and the milk of cow, buffalo, goat and sheep, describing distinct qualities of each. Milk derived products are butter, curd, buttermilk and ghee in wide use. The use of colostrum became prevalent and was mixed with boiled milk, crystal sugar and fragrant herbs are used after 800 BCE (Sarkar et al, 2015). Ayurveda has mentioned clearly that milk has unique nutrition that cannot be provided other foods (Saline Ray et al, 2019).

These are considered noble and extraordinary. Especially ghee obtained from cream by removing water the remaining nonfat solids and fat develop characteristic flavor and texture. In traditional way water buffalo milk (~ 17% of total milk production of country) is converted into curd for consumption. Curdling is heated buffalo milk is by coagulation of milk protein at low pH(4.8-

5.8) due to lactic acid produced by growth of *Lactobacillus delbrueckii* subsp. *lactis*, *L. plantarum*, *L. helveticus*, *Lactobacillus delbrueckii* subsp. *Bulgaricus* and *L. casei* subsp. *Casei*, *Streptococcus thermophilus* and *S. lactis*, *S. diacetylactis*, *S. cremoris* under precise fermentation. Buffalo milk has high total solids content (16.3 to 18.4%); protein (3.8-4.5%), fat (6.6-8.8%), lactose (4.5-5.2%) and Casein (3.0-3.2%) compared with cow's milk and produces a firmer curd that is a bio-therapeutic agent with long history of use in traditional medicine and also whey fraction or buttermilk (Moru) makes a beverage (Miharinae et al, 2020).

Buffalo milk contains more fat than cow's milk contains twice as much protein than human breast milk. Fresh milk has 97% protein with all important amino acids, fat 99% digestible, carbohydrates 98% digestible Vitamins specially Vitamin B-complex, E and D, various minerals like phosphorus, iron and calcium. Usually milk takes 1 and ½ hours for digestion. It increases strength, memory, removes exhaustion, maintains strength and promotes longevity. Taken appropriately gain these benefits common for all age groups. Sometimes considering prakurti of the individual it can be taken with spices that help in digestion. Highly recommending taking the milk it has sunlight's energy. The grass formed from the sun's energy and chewed thoroughly by cows, high absorption in the body of cow. USDA (US Department of America) guidelines state that milk product consumption is combined with overall diet, supplying calcium, potassium, magnesium, zinc, iron, riboflavin, Vitamin A, foliate and Vitamin D. Adequate vitamin D is dependent on dietary intake and synthesis of cutaneous is vital in optimal calcium absorption, and reduce the risk for bone loss. Effects of milk derived products (Mirunalini R, 2010).

**THERAPEUTIC VALUES OF MILK (Ksheera) -AYURVEDA VIEW**

Indian cow, *Bos indicus* has been considered as sacred animal by Hindus. Cow Milk is considered Amrita. Kamdhenu (one which fulfills all the wishes) the cow of God Indra is known for her milk. Vedic times in Indian civilization believed to be a "mobile hospital" for various treatments. Number of diseases cured by use of products derived from cow (Kaushika et al, 2016). The properties and pharmacological action of milk of eight different animals have been mentioned in the classical Ayurveda texts. Milk quality depending on animal source, the qualities of milk in taste, potency and post digestive action. Basic quality of milk is sweet (madhura rasa), cold in potency (sheeta veeriya) post digestive, unctuous (Kukkupuni et al, 2022).

According to bhaisajya Ratnawali milk of black cow relieves vata and best for patient. Milk of white cow aggravates kapha, red cow aggravates vayu. Milk of brown cow improves vayu and pitta. Milk of yellow cow alleviates pitta and that is very useful. For the respiratory problems parturated cow is very useful. Milk boiled in copper improves vayu, gold alleviate pitta, silver it alleviates kapha and in bronze it promotes blood mentioned in Bhaisajya Ratnawali. Madhiyadhikar of this book has mentioned milk with turmeric help in alleviating pain and healing of fracture, intoxication caused by dhathura is cured by milk, mixed with sugar. Hikkaswasadhikar has mentioned that stool of fly mixed with milk, or milk mixed with Candana cures hiccups.

Atreya said rain water extinguishes fire of forest, patient who suffers from fever and emaciation by fasting therapy become free from ailment by intake of milk. Milk which is medicated, cold, hot, dharoshna (warm immediately after milking of cow) or the foam collected by churning all useful like nectar for the patients who has fever, milk foam is useful weak patient having power of digestion mentioned by Atreya. In old age milk is a

blood purifier and useful in various disorder.

Charaka has mentioned that a patient suffering from fever which is caused by vata and pitta associated with burning sensation and thirst get cured by milk. It is possible doshas are adhered or detached or in nirama state. It has been mentioned the way it strengthens the saptha dhatus (tissues) Rasa(Plasma), Rakta(Blood), Mamsa(Muscle), Meda(Adipose tissue), Asthi(Bone), Majja(Bone marrow) and Shukra (Reproductive tissue)(Prasad and Naresha, 2022). In case of chronic fever, kapha dosha may decrease. After the fever is reduced in intensity, residual dosa of such patients should be removed by administration of milk. In first stage of fever, and then it works as a poison and may kill the patient. Milk should not be administered to patient suffering from hiccup and remittent type of fever. But patient is suffering from asthmas and irregular type of fever, milk works as immortal. Susruta has mentioned that patient is suffering from fever because of vadha (stabbing), bandha (tying of ropes), samavesha (affliction by evil spirits), fracture and dislocation should be commencement, be given food including alcoholic drinks. Milk(32 parts), sugar(2parts), ghee(1part), pippali (1part) churned with the help of stirrer and given to patient to drink, it cures irregular type of fever, heart disease, cough and phthisis (Panca Sara). Hoarseness of voice is because of loud speaking take milk boiled with drugs belonging to Madhura gana, mixed with sugar and honey. Madhura varga is useful for patients those who are suffering from fainting.

Yoga Ratanakar: Swar Bheda Chikitsa has mentioned powder of amalka or the paste of Badri or Saindhava fried with ghee, should be taken along with cow's milk in the form of linctus cures hoarseness of voice and cough. Astanga Kanda has mentioned that Candur mixed with milk and added with ghee and sugar

cures stiffness of lumbar region and sciatica. Harischandra mentioned four palas of cleaned and dried garlic should be added to eight times of milk and water and boiled till the milk remains. It cures pain in arms, sciatica, irregular fever abscess and heart diseases. Generally Ksheer/dugdha term denotes milk. It is easily available product and it can be administered as mode for various herbal. Tushthi and Pushtikaraka. Enhances mamsa dhatu, jeevaniya shakthi, reduces fatigue, cures Shwasa, Kasa, and cures Rakta pitta, help healing fractured bones. It is satmya for all tridosha and srotas shodhaka. Reduces condition Trushna also. In Ayurveda use of milk in various therapeutic functions such as Pandu, Amlapitta, Gulma, Udara roga, Yoni roga, shukra roga, Vata roga (Anuja Hari Gholap et al, 2015).

According to Acharya Charaka samhitha various formulations of medicated milk along with their role in diseases has been mentioned. Ksheerapaka nourishes tissues and has more anabolic effects. Various Siddha ksheer yogas have been mentioned. Siddha ksheer yogas mean medicated herbs giving with milk. Rasayana, Vajikaran, Jwara, Rakta pitta, Gulma, Rajukshama, Kshata ksheen, Svayatha, Udar, Grahani, Kasa, Visarpa, Trushna, and Trimarmiya. Ksheerapaka means milk is used in medicated form. Ksheerapaka therapeutic efficacy depends on ingredients which are used on it and proportion of ingredients. Ksheerapaka has Ushna(Hot), Teekshana(Penetrating) properties. Because of these properties improving efficacy and specific target action. While administering Ksheerapaka consider the large dose is prescribed for all age group. Extremely it is beneficial to children, elderly people, emaciated, hungry and weak (Anuja Hari Gholap et al, 2015).

Vagbhata has mentioned that cooled milk produces excess secretions and blocks the channels because it has

Abishayandi guna. It won't digest easily and causes disease too much of boiling also causes same digestive disorder. In case of Kapha related diseases patient can't consume milk. Human milk is good for eye diseases. Goat milk is best galactagogs, pacifying debility,

hemostatic and improves internal hemorrhage. Buffalo milk is good for insomnia and sheep's milk is not good for pitta and kapha diseases (Kukkupuni et al, 2022).

### Therapeutical Values of Milk

Cow milk is a healthy food because of low calorie, low cholesterol and high micro-nutrients, protein, calcium, vitamins and plays an important role in meeting requirements of various essential requirements. It has carotenes, Vitamin A, Vitamin B, complex group and Vitamin C. It has rejuvenating health protecting properties and it is best vitalizes. It has bio-protective role in human health and easily digestible. It can be used in curing fever, pain, tumors, diabetes and weakness and importantly act as medium to administer medicine. Delay the processes involved in aging (Kaushik et al, 2016).Cow milk has the highest consumption among animal milk in India, Brazil, China, Sudan, Ethiopia, USA, Argentina and Paraguay.90% of share in the total world milk production followed by buffalo milk(5%), goat milk(3%), and sheep milk(2%).Cow milk has unique position amidst foods and it has ensured that necessary nutrients which required by humans cognitive and physical development Is available(Anotony et al, 2018).

Cow milk has soluble components are whey protein and milk protein fraction and an insoluble proteins caseins protein and milk protein fraction. The beneficial of these components both are good source of amino acids, which are essential to development of human (El-stayed et al, 2020).Cow milk has isoleucine, threonine, methionine and tyrosine. Milk proteins include caseins,  $\beta$ -lacto globulin,  $\alpha$ -lactalbumin, immune globulins, lactoferin and serum albumin act on immune system as well as cardiovascular system and nervous system. Bioactive peptides in milk govern health care by risking Obesity & Type-II Diabetes. Hydrolysis of Lactalbumin produces peptides with immune effect which trigger phagocytosis via specific receptors maintain the immunity. Immune modulatory and anti-carcinogenic effect is present. It has amino acids is a natural alkaline. It regulates circulatory system and central nervous system. It cleanses the auto-synchronous human body (Nishant kaushik et al, 2015).

Table 1: Nutritional Analysis of Different milk types

Milk Type	Units	Cow	Goat	Buffalo	Sheep	Human	Soy
Nutrient							
Water	gm.	87.99	87.03	83.39	80	87.5	93.27
Energy	Kcal	67	69	117	108	70	33
Protein	gm.	3.20	3.56	4.30	5.98	1.03	2.75

Lipids[Fat]	gm.	4.10	4.14	6.50	701	4.38	1.92
Ash	gm.	0.72	0.82	0.79	096	0.2	0.27
Carbohydrates [Lactose/sugars]	gm.	4.46	4.45	5.00	5.36	6.89	1.81
Minerals							
Calcium Ca	Mg	120	134	210	193	32	4
Iron Fe	Mg	0.05	0.05	0.12	0.1	0.03	0.58
Magnesium Mg	Mg	23	14	31	18	3	19
Phosphorus P	Mg	90	111	130	158	14	49
Potassium K	Mg	185	204	178	137	51	141
Sodium Na	Mg	73	50	65	44	17	12
Zinc Zn	Mg	0.38	0.3	0.22	0.54	0.17	0.23
Copper Cu	Mg	0.011	0.046	0.046	0.046	0.052	0.12
Maganese Mn	Mg	0.004	0.018	0.018	0.018	0.026	0.17
Selenium Se	Mg	2	1.4	1.55	1.7	1.8	1.13
Vitamins							
Vit C	Mg	1.9	1.3	6.7	4.2	5	0.0
Thiamin	Mg	0.038	0.048	0.052	0.065	0.014	0.161
Riboflavin	Mg	0.162	0.138	0.135	0.355	0.036	0.070
Niacin	Mg	0.084	0.277	0.091	0.417	0.177	0.147
Pantothenic acid	Mg	0.314	0.31	0.192	0.407	0.223	0.048
Vit B6	Mg	0.042	0.046	0.023	0.06	0.011	0.041
Folate[Vit B9]	Mcg	5	1	6	7	5	1.5
Vit B12	Mcg	0.36	0.07	0.36	0.71	0.05	0.0
Vit A[Carotene]	IU	126	185	178	147	241	32
Vit A[Retinol]	Mcg	28	56	53	44	60	-
Vit D	IU	52	51	-	-	4	-
Vit E	mg- ATE	0.1	0.09	0.13	-	0.9	0.01
Amino acid							
Tryptophan	Gm	0.046	0.044	0.053	0.084	0.017	0.043



Threonine	gm.	0.149	0.163	0.182	0.268	0.046	0.113
Isoleucine	gm.	0.199	0.207	0.203	0.338	0.056	0.144
Leucine	gm.	0.322	0.314	0.366	0.587	0.095	0.241
Lysine	gm.	0.261	0.29	0.28	0.513	0.068	0.179
Methionine	gm.	0.083	0.08	0.097	0.155	0.021	0.040
Cystine	gm.	0.03	0.046	0.048	0.035	0.019	0.047
Tyrosine	gm.	0.159	0.179	0.183	0.281	0.053	0.112
Phenylalanine	gm.	0.159	0.155	0.162	0.284	0.046	0.151
Valine	gm.	0.22	0.24	0.219	0.448	0.063	0.141
Arginine	gm.	0.119	0.119	0.114	0.198	0.043	0.214
Histidine	gm.	0.089	0.089	0.078	0.167	0.023	0.071
Alanine	gm.	0.113	0.118	0.132	0.269	0.036	0.122
Aspartic Acid	gm.	0.25	0.21	0.309	0.328	0.082	0.341
Glutamic acid	gm.	0.689	0.626	0.477	1.019	0.168	0.550
Glycine	gm.	0.07	0.05	0.08	0.041	0.026	0.120
Praline	gm.	0.319	0.368	0.364	0.58	0.082	0.162
Serine	gm.	0.179	0.181	0.277	0.492	0.043	0.144
<b>Lipids[Fats]</b>							
Mono-unsaturated	gm.	0.965	1.109	1.787	1.724	1.658	-
Poly-unsaturated	gm.	0.124	0.149	0.146	0.308	0.497	-
Cholesterol	Mg	31	11	6.5	27	14	-
Total saturated	gm.	2.079	2.667	4.597	4.603	2.009	-

(Source: Nishant Kaushika et al, 2015)

Comparative study was conducted to analyses the quality of milk in Pakistan from Buffalo, Cow, Sheep and Goat. Results were showed that cow milk was

best among other species (Rashida et al, 2004).

### Therapeutical Values of Curd (Dadhi) - Ayurvedic View

Curd derived from cow milk. Obtained from fermented milk by adding few drops of curd or buttermilk. It has vatanashak, rakthashodhaka, tridoshanashak and useful in pitta, blood related problems, arshas (Hemorrhoids), gastrointestinal problem. It has sour (amla rasa) and astringent (katu rasa), hot in potency (ushana veerya), unctuous (snigdha guna), coats over the channels which are carrying dosha, dhathu and mala (abhishtandi) and sour post digestion (amlavipaka) (Priyanka and Mallika, 2014).

रोचनं दीपनं वृष्यं स्नेहनं बलवर्धनम् |  
पाकेऽम्लमुष्णं वातघ्नं मङ्गल्यं बृंहणं दधि | | २२५ | |  
पीनसे चातिसारे च शीतके विषमज्वरे |  
अरुचौ मूत्रकृच्छ्रे च कार्श्ये च दधि शस्यते | | २२६ | |  
शरद्वीर्षभवसन्तेषु प्रायशो दधि गर्हितम् |  
रक्तपित्तकफोत्थेषु विकारेष्वाहितं च तत् | | २२७ | |  
rocanaṃ dīpanaṃ vṛṣyaṃ snehanaṃ balavardhanaṃ |  
pāke'mlamuṣṇaṃ vātagnaṃ maṅgalyaṃ br̥hṇaṃ dadhi | | 225 | |  
pīnase cātisāre ca śītake viṣamajvare |  
arucāu mūtrakṛcchre ca kārśye ca dadhi śasyate | | 226 | |  
śaradgṛīṣhavasanteṣu prāyaśo dadhi garhitam |

It has rochana (Improves taste, appetizer), Deepana (Improves digestion strength), Vrushya (aphrodisiac), Snehana (Imparts oiliness), Balavardhana

It is best for vajikarana, vitalizer, savoring, appetizer and strength promoting. Curd from cow's milk is considered to be best. Ayurveda has classified curds based on physical features and tastes into five types. Such as manda (sweet), sweet (swadu), swaduamla (Sweet-sour), amla (sour) and atyamla (excessive sour). sweet curd vitiate kapha dosa and sour curd vitiate pitta dosa and causes skin disorder for long term consumption. Upper layer of watery part is called mast which has laugh guna it increases the appetite, cleanses the channels and pacifies the thirst (Kukkupuni et al, 2022).

(Improves strength and immunity), Amla vipaka (Sour taste conversion after digestion), Ushana (Hot), Vataghna (Balances Vata), Mangalya (Auspicious), Brumhana (Improves nourishment).

Table 2: Milk source for curd and Therapeutic actions

Source of Milk for Curd	According to Ayurveda
Goat Milk	Tridoshashamaka Deepana
Buffalo Milk	Snigdhatama, increases Kapha Pacify the vata
Camel's Milk	Katu rasa, ushana veerya, katu vipaka, Pacify the vata
Sheep Milk	Madhura rasa and vipaka Vitiates tridosha
Mare's Milk	Tikta rasa, ushana veerya, katu vipaka, ruksha, laghu, abhishtayandi guna, alleviates vata

Human Milk	Madhura rasa and vipaka, guru guna, vata and pitta shaman
Elephant's Milk	Tikta rasa, katu vipaka, ushana veerya, laghu guna, Pacify the kapha

(Source: Kukkupuni, et al 2022)

Table 3: Types of Curd and their properties according to Ayurveda

Types of Curds	Physical features and taste	Action
<i>Manda</i>	Milk taste, thick	Vitiates <i>tridosha</i> and produces burning sensation
<i>Swadu</i>	Coagulated, sweet in taste	Good for bleeding disorder
<i>Swaduamla</i>	Thick, sweet, sour and astringent taste	Increase digestive power, <i>pitta, kapha</i>
<i>Amla</i>	Sour	Increase digestion
<i>Atyamla</i>	Excessive sour taste	Increase digestion, exacerbate blood diseases, burning sensation

(Source: Kukkupuni et al, 2022)

### Therapeutical Values of Curd

Curd is naturally sweetish sour in taste, hot in potency, sour in post digestive taste and heavy to digest. Its attributes of curd varies according to type and nature of milk and its fermentation time. Attitude of milk unctuousness vary in accordance with habitat of animals and time of milking, for instance, milk of low altitude animal or collected time during morning is heavy. Specifications are also applicable to curd according to types of milk. Boiled milk derived curd could serve more than curd prepared from unboiled milk. Boiled milk curd helps relishing, promotes tissues and aid to digestion. Researches were conducted to check percentage of total nitrogen and ammonia level in curd which are prepared from boiled and unboiled milk. Boiled milk has showed low level of total nitrogen and ammonia level (Asha, 1989).

Goat milk derived curd has softer and small casein molecules aids in hemorrhoids, dyspnea, tuberculosis and

cough, Stimulate mucosal immune system and improves defense mechanism against intestinal and respiratory system. Produce GABA (Gamma-aminobutyric acid) and ACE (Angiotensin Converting Enzyme) inhibitors control high blood pressure. Camel's milk derived curd has insulin molecules it is used to treat diabetes, antimicrobial activity and strengthen cellular immune response. In sheep milk Hematological disorder, inflammatory diseases, wound and gouty arthritis, Contain high level of solids and nutrients compare to goat and cow milk. Human milk is good for eye diseases (Priyanaka and Mallika, 2014).

Table 4: Analysis of Boiled milk and unboiled milk Amonia and Nitrogen Level

Product	Total N %	NPN %	Protein %	Dialisable Nitrogen %	Amonia Nitrogen Level
Cow milk (Unboiled)	0.56	0.048	0.512	0.017	0.24
Curd 1 <sup>st</sup> day	0.57	0.073	0.497	0.027	9.79
Curd 7 <sup>th</sup> day	0.55	0.144	0.406	0.060	X
Buffalo milk (Unboiled)	0.65	0.038	0.612	0.021	0.16
Curd 1 <sup>st</sup> day	0.65	0.052	0.598	0.22	12.20
Curd 7 <sup>th</sup> day	0.66	0.081	0.579	0.034	9.74
Buffalo milk (Boiled)	0.64	0.040	0.600	0.023	0.36
Curd 1 <sup>st</sup> day	0.65	0.059	0.591	0.026	13.86
Curd 7 <sup>th</sup> day	0.63	0.057	0.573	0.029	12.45

(Source: Priyanak and Mallika, 2014)

Usage of curd in disease physiology has explained like this taste enhancing and saliva promoting property is important it is attributed to its acidic taste, sodium and calcium ions. Another in vitro study was conducted and identified that probiotic of curd inhibit the growth and adhesion of a range of enteropathogens like Salmonella (Babae, 2013).

Preventing and treating of acute diarrhea caused by rotavirus in children and useful in lactose intolerance (Labayen, 2001). Healthy bacteria *L. acidophilus* assimilates cholesterol by enzymatic de conjugation, therefore decreases the LDL level (Ataie-Jafari, 2013).

It is useful in protein malnutrition. *Lactobacillus acidophilus* effective in candida colonization and bacterial vaginitis (Robert S, 2013). Control the hypertension means anti oxidative effect through inhibiting angiotensin.

#### Therapeutic Values Buttermilk (Takra) – Ayurveda Review

It is liquid part prepared by curd after churning well with water. Continuously churning the curd for three hours (one prahara) with different ratios of water (S.et al., 2019). Traditionally before cream should be skimmed from whole milk, milk was left to sit for a period of time to allow the cream and milk separation. Amidst this time lactic acid- producing bacteria will be fermented. It eases the butter churning process. Fat from cream with a lower pH coalesces more readily than that of fresh cream. Benefit of acidic environment prevents the microorganism growth. Used cream separated from that and it is full acidic. Traditional butter milk denotes extracted liquid part it is topped with sugar, salt, cumin, asafetida or curry leaves with every meal in southern India (Yeragi and Maske, 2016).

It has sweet (madhura rasa), sour (amla), astringent (Katu rasa), hot in potency (ushna veerya), laghu and ruksha guna. It enhances the digestive fire (agni), pacify the minor poisons if intake into body, edema condition will decrease and pacify the diarrhea conditions,

anemia(Pandu roga),dysuria, excessive salivation(lalasrava), vomiting(Chardi), excessive body fat(Medo roga),Fever(Jwara) and Splenomegaly. It is good for Kapha and Vata doshas. Ayurveda texts have mentioned according to fat content it can be divided into three such as fat-free, half-fat and full-fat(Kukkupuni et al, 2022).

शोफाशोग्रहणीदोषमूत्रग्रहोदरारुचौ |  
 स्नेहव्यापदि पाण्डुत्वे तक्रं दद्याद्गरेषु च || २२९ ||  
 śophārśograhaṇidoṣamūtragrahodarārucau |  
 snehavyāpadi pāṇḍutve takraṁ dadyādgareṣu ca || 229 ||

### Cha.Samhitha-27

Shopa (Odema), Arsha (Hemorrhoids), Grahani (Malabsorption, Irritable bowel syndrome), Mutragraha (Urine retention), Udara (Ascites), Aruchchi (Anorexia, Lack of interest in food), Snehavyapat, affliction with Gara type of poison, Pandu (Anemia, initial stage of liver disorders).

Takram laghu Kashaya amlam deepanam kaphavatajait |  
 Shophā udara arsha grahani doṣa mootragraha aruchihī |  
 pleeha gulma ghrītavāpat gara paandu aamayaan jāyet ||

### Ash.Hrd-Cha-5

According to Ashtanga hrdaya it has laghu guna, Kashaya and amla rasa, agni deepanam and kapha and vatajit so these qualities help in amavata.

### Therapeutical Value of Buttermilk

Table 5: Nutritional Value of Butter milk

One cup (237ml) of Buttermilk	Quantity	% Value
Calories	99cal	
Total Fat	2.2g	4%
Saturated Fat	1gm	8%
Cholesterol	10mg	4%
Sodium	260mg	10%
Total Carbohydrates	10g	4%
Protein	8g	15%
Vitamin A	130.00IU	2%
Vitamin C	5.00mg	4%
Calcium	-	30%
Thiamin	-	6%
Zinc	-	8%
Riboflavin	-	20%
Vitamin B-6	-	10%
Phosphorus	-	20%
Magnesium	-	8%
Potassium	370mg	-
Calcium	284mg	-
Protein	16.55g	33.1%
Iron	0.25mg	1.4%

(Source: Rajendra Nirgude et al, 2013)

Buttermilk contains required macronutrients such as carbohydrates minimal lipids, vitamins and essential enzymes and makes complete balanced diet. In buttermilk 90% of water present. So it balances the water of the body. It absorbed slowly from the intestines as its contents are mostly combined with protein so it nourishes human body and tissues (Yeragi and Maske, 2016).

Protein is content of buttermilk and skim milk. Caseins are existing in buttermilk. So it act as protein synthesis, inhibit proteolysis, appetite suppression, anti-hypertension, thrombotic, immune modulatory activity and ACE- inhibitory activities. Whey protein also helps to protein synthesis, onset of insulin secretion, decrease arterial stiffening, provide protection against intestinal, mammary and colon cancers. Increase absorption of minerals, lipid soluble vitamins, anti-microbial, anti-viral and immune modulatory actions are present in buttermilk (Chaudhary and Jaiswal, 2016).

Milk has full of fat and calcium sometime lactose intolerance patient could not consume calcium from milk. At that time buttermilk is the best option for them it has calcium and less fat. Less fat content helps those who are suffering obesity related issues and diabetes. Because buttermilk has lactose converting healthy bacteria so it can be given to lactose intolerance patient. And also it helps in slow down the bone loss in adults, supply calcium to teeth to children and add calories to body skeletal system. Buttermilk has vitamin B complex and vitamin D it prevent from anemia and weakness (Rajendra et al, 2013).

Natural remedy which lower the blood cholesterol and control the cholesterol. It has lactic acid bacteria it combat detrimental pathogens in our body. High levels of calcium, magnesium and potassium help in lowering blood pressure. Best way to use without adding salt. This probiotic is combat against vaginal infections and urinary tract infections. Researches findings have stated that buttermilk helps in get rid of heart burn, acidity, stomach ulcers, gastro esophageal reflex disorder also. Cup of buttermilk to mixture of rice and banana get rid of hemorrhoids (Yeragi and Maske, 2016).

Buttermilk specifically has MFGM (Milk Fat Globule Membrane), phospholipids, casein and whey protein. Sphingolipids they do signaling and have strong impact on development of brain functions. It helps in children, ageing persons and probably for Alzheimer patients well. Sphingolipids are vital constituent of myelin-covering which regulate irritability and transmitter release in nervous system. Bovine MFGM 120types has been founded. One of protein XDH/XO inhibits growth of bacteria such as Staphylococcus aureus, Escherichia coli and Salmonella enteritidis (Chaudhary and Jaiswal, 2016).

### **Therapeutic Values of Butter (Navaneeta)-Ayurveda View**

Butter is obtained from churning curd after addition of sufficient quantity of water. Directly churning from cream of milk has more unctuous (snigdha), hard to digest (Guru guna) and causes constipation. Butter is cold in potency (sheet veerya), sweet (madhura rasa), sour (amla rasa) and slightly astringent (katu rasa).

It pacifies vata and pitta vitiation. It has ability to get rid of tuberculosis, hemorrhoids and facial paralysis. It is best for bleeding disorder and eye disorder. Ayurveda mentioned only consume fresh butter; old butter (rancid) has alkaline, pungent and sour. It gives adverse effect such as vomiting, piles, skin diseases and kapha disorder (Kukkupuni et al, 2022).

संग्राहि दीपनं हृद्यं नवनीतं नवोद्धृतम्।

ग्रहण्यर्शाविकारघ्नमर्दितारुचिनाशनम्॥

Cha.Samhitha-27

It has samgrahi (Stool adhering properties), Deepanam (Improve digestive capacity), Hridya (Cordial or pleasant to heart) and diminishes the symptoms like Grahani (Inflammatory disease of bowel), Arsha (Hemorrhoids), Ardita (Facial Paralysis) and Aruchi (Nausea and Vomiting).

### Therapeutical Value of Butter

Dairy oils form the raw material of butter, which derived from animal fat. It has important dairy oils, fatty acids and fat soluble vitamins. Easily digest and melt in human body temperature. All these properties of milk fats enhance the value

of butter. Milk contain high content of milk (Gosewasde et al, 2017). Butter has phospholipids, hydrocarbons, sterols and sterol esters, complex glyceride oils, free fatty acids, fat soluble vitamins and minerals. Furthermore high content of water and milk fat available (Kumar et al., 2016). Naturally butter has superior aroma and taste, high calorie supplement, concentrated milk fat product. Churning this milk fat butter produces (Hamed et al, 2019).

*Table 6: Nutritional Analysis of Butter*

Nutrients amount per 100g	Quantity	% values
Calories	717	
Total fat	81g	124%
Water	16.2g	-
Saturated fat	51g	255%
Trans fat regulation	3.3g	-
Cholesterol	215mg	71%
Sodium	11mg	-
Potassium	24mg	-
Total Carbohydrate	0.1g	-
Dietary fiber	0.1g	-
Sugar		
Protein	0.9g	1%
Vit C	-	0%
Vit D	-	15%
Iron	-	0%
Vit B6	-	0%
Magnesium	-	0%
Cobalamin	-	3%

(Source: USDA, 2018)

## Therapeutic Values of Clarified Butter (Ghrita)-Ayurveda View

Table 7: Therapeutic action according to classical text

Karma	Charaka Samhitha	Susrutha Samhitha	Ashtanga Hrdaya
Agnivardhaka	+	-	-
Rasavardhaka	+	-	-
Balya	+	+	+
Ojavardhaka	+	-	-
Kantivardhaka	+	-	+
Indriyabalavridhhi	+	-	-
Buddhivardhaka	+	+	+
Vayastapa	+	+	+
Unmadahara	+	+	+
Apasmarahara	-	+	-

(Source: Mehta et al, 2019)

Clarified milk fat or butter fat is called Ghrita. Ghee is prepared by heating butter or cream to just over 100°C to remove water content. Goghrita is the best option for the food and medicinal purpose. In Ayurvedic text books mentioned ghrita denotes goghrita. It is one ajasrika rasayana. It best bala, ojo and ayu vardhaka, vayasthapaka and dhathuposhaka one of the best snehana dravya. Medicated ghrita is yogavahitava (Mehta et al, 2019).

According to Bhavaprakasha ghrita can be used as netra aschyotana, pachana, tridoshanashaka, bala, medhya, vayastahapa and sosa, kustha, unmada, murcha, apasamara, ksata, shiroroga, akshiroga, vrana, sosa, jwara, daha, smrti, agnimandya such diseases also. Goghrita is uttaamam.

Special place for ghee is mentioned in Ayurveda among cow products. It has lot of medicinal values. Many medicinal preparations called Ghritapakas. Ghee has sweet taste (madhura rasa), heavy and unctuous (guru and snigdha guna), cool in

potency (sheeta veerya) and Vipaka madhura. Best rejuvenator (rasayana), intelligence, cognitive, digestion, life force (ojas) and reproductive tissues. Excessive consumption may increase kapha dosha and body fat. Pacify vata and pitta doshas and removes poison. Ghee which is obtained from cow's milk is best. Buffalo ghee is best for aphrodisiac and useful in eye diseases. Goat's ghee is best for treating respiratory diseases such as cough, tuberculosis and dyspnea. Camel's ghee is useful in relieving swellings. Sheep's ghee is contraindicated for mild and moderate digestive power.

According to Ayurveda intake of fresh ghee for dietary is best for anemia and jaundice. Old ghee is used for intoxication, epilepsy, insanity and poison. Purana Ghrita ghee which is preserved for 10 years. Mahapurana Ghrita can be preserved for 100 years (Kukkupuni et al, 2022). Charaka has mentioned that properties of ghee of animals are similar to their milk. Properties of cow's milk are such as sheeta, mrudu, snigdha, picchila, guru, manda and pleasing properties. These properties develop the ojas. Jivaniya and Rasayana.

## Therapeutical Values of Clarified Butter



*Table 8: Chemical composition of Cow Ghee*

Triglycerides	97.98%	Phospholipids	0.2-1.0%
Diglycerides	0.25-1.5%	Steroles	0.22-0.4%
Monoglycerides	0.16-0.038%	Vitamin A	2500/100gms
Ketoacid glyceride	0.015%-0.018%	Vitamin D	8.5×10.7gm/100gm
Glycerylestors	0.011-0.015%	Vitamin E	24×10.3gm/100gm
Free Fatty acid	0.1-0.44%	Vitamin K	1×10.4gm/100gm

(Source: Mehta et al, 2019)

*Table 9: Fatty acid analysis of Ghee*

Fatty Acids	Percentage (%)
Butyric acid	4.5-6.0
Caproic acid	1.0-1.36
Caprylic acid	0.9-1.0
Capric acid	1.5-1.8
Lauric acid	6.0-7.0
Myristic acid	21.0-23.0
Palmitic acid	19.0-19.5
Stearic acid	11.0-11.5
Arachidic acid	0.5-0.8
Oleic acid	27.0-27.5
Linoleic acid	4.0-5.0

(Source: Mehta et al, 2019)

These fatty acids easily digestible and helps in growth of human body. Ghee is rich in vitamins such as vitamin A, B, E and K. Normally vitamin A and E are best antioxidants. Prevent oxidative activity. Vitamin A gives to body moisturizer and helps in good eye sight. Vitamin E protects RBC from hemolysis and boosts immunity. Best antioxidant prevents attack from free radicals. Fatty acids short chain fatty acids (SCFA), medium chain fatty acids (MCFA), long chain fatty acids

(LCFA) and very long chain fatty acids (VLFCA). Among this table Butyric acid and Caproic acid are SCFA in ghee. They do not require prolong digestion and no need of pancreatic juice and bile salts. Easily diffuse into portal circulation. Liver convert that into energy form. SCFA and MCFA both oxidized by peripheral cells and not deposited in adipose tissue. Some fatty acids which body cannot produce such linoleic acid. It is available in ghee (Joshi, 2014). Arachidic acid is precursor of prostaglandins. Prostaglandins part of inflammation and immunity process. Mechanism of cow ghee in body is lipophilic action of ghee facilitates transportation to a target organ and final delivery inside the cell, because cell membrane has lipid. The lipophilic nature of ghrta facilitates entry of the formulation into the cell and its delivery to mitochondrion, microsomal and nuclear membrane. So this mechanism helps to absorb the medicated ghee and delivery to targeted organ. It is highly beneficial to health (Mehta et al, 2019).

Cow ghee showed anticancer potential against 7, 12-dimethylbenz (a)-anthracene (DMBA) induced mammary carcinogenesis and expression of cox-2 and perioxisome proliferators activated receptors- $\gamma$  (PPAR- $\gamma$ ) in mammary

glands of rats revealed (Madhavan et al, 2021). The mechanism also revealed in this study cow ghee decreased the activity of Cytochrome P450 (CYP) enzymes- CYP1A, CYP1A2, CYP1B1 and CYP2B2 which are responsible for activation of carcinogens in liver. Meanwhile activities of Uridinediphospho-glucuronosyl transferase (UDPGT) and Quinone reductase (QR) in liver and  $\gamma$ -glutamyltranspeptidase (GGTP) and QR were increased due to cow ghee. It detoxify activity of carcinogen has done through GGTP enzyme (Rita and Vinod, 2012). Ghee contains several saturated and unsaturated fatty acids which are capable of taking part in metabolic processes involved in any wound healing activity. It has antifungal activity. Comparison study of Framycetin sulphate cream (1% w/w) and Aloe vera with ghee for wound healing process. Aloe vera and cow ghee has showed good keratinization, epithelization, fibrosis and collagen production. Best eye lubricant cow ghee for computer vision syndrome. It has Vitamin A 3500/100gm, beta-carotene and Vitamin E. Vitamin A keeps the outer lining of eye ball moist and prevent blindness. Beta-carotene and Vitamin E are well known antioxidant (Kaushik et al, 2016).

Some studies have proved that conjugated linoleic acid (CLA), butyric acid, sphingomyelin, lipid, vitamins. CLA inhibits growth of melanoma, leukemia, mesothelioma angioblastoma has anti-carcinogenic activity. Hypo cholesterolemic effect of ghee is mediated by increasing the secretions of biliary lipids. Ghee is observed to improve growth rate and digestibility (Kumar et al., 2000). On findings 10% triglyceride level has increased in Fischer inbred rats, but did not increase liver microsomal lipid peroxidation or liver microsomal lipid peroxide levels. This animal study was revealed dose dependent ghee consumption decreases in serum total

cholesterol, low density lipoprotein, very low density lipoprotein and triglycerides, liver total cholesterol, triglycerides and cholesterol esters and low level of non-enzymatic-induced lipid peroxidation in liver homogenate. (Sharma et al, 2010).

Traditional method preparation ghee has higher amount of docosaenoic acid (DHA) and omega-3 long chain polyunsaturated fatty acid (PFA). DHA act major role in heart disease, cancer, insulin resistance and arthritis. Omega-3 long chains PFA are a major component of retinal and brain tissue and have been associated with anti-inflammatory pathways. So decrease inflammation and normalize the gastrointestinal inflammation and anti-tumor activity to colon carcinoma cell line. Several Alzheimer's described lack of DHA. High content of fatty acid precursors for DHA. Ghrita has high content of DHA (Sharma et al, 2010).

It reduces the risk of heart attack, cancer, insulin resistance, arthritis and ADHD (Attention Defective Hyperactivity Disorder). DHA is high in traditional fermentation method prepared ghrita (Joshi, 2014). 100g of ghrita contains 178.2mg cholesterol and it has been reported to contain 900kcal total energy. Intake of 15g of ghrita daily amounting to about 1 tablespoon provides about 27mg cholesterol and 135kcal of total energy. Consonance is recommended by National heart, Lung and Blood Institutes.

### **Current status of Dairy Production in Sri Lanka**

Consumption of fermented dairy products has been remarkably increased when compared consumption of liquid milk over past few decades. Milk coagulation is important role in fermented dairy product processing since it widely used to diversify the products obtained from raw milk. In Sri Lanka fermented

dairy products such as set and drinking yoghurts have been produced in large scale and widely used by people. But consumption of chesses and butter like fermented products are minor stage due to lesser yield and poor quality of the final product. Major reason for the poor quality variation of milk coagulation properties (Agriculture research committee, 2018).

Findings of Thamankaduwa white and local breed are better than Friesian breed. Highest amounts of  $\beta$ -casein-B genetic variant and Kappa-casein content are available in milk of Thamankaduwa white cattle among other breeds. The white cattle can be considered as a cattle type with better milk coagulation properties and thus can be preserved and promoted as a breed for production of highly dairy products compared to that of the other breeds. Another study was conducted for efficiency of production of butter from raw milk was higher in Thamankaduwa breed. Textural attributes of butters which are produced from Thamankaduwa breed. From these findings most appropriate quality of cattle breed identified. (Weerasingha et al., 2022).

Mozzarella cheese manufacturing is very low in Sri Lanka. Traditional buffalo mozzarella represents very small part of the market which is dominated by cheese made with cow's milk in Sri Lanka. Huge demand for mozzarella cheese in bakery industry and domestic supply is not enough to meet local demand. There is effort for development of low cost mozzarella cheese production under Sri Lanka condition is much needed. Research was conducted with buffalo mozzarella cheese showed better organoleptic properties and physiochemical properties compared to rest of mozzarella cheese samples (Abeysinghe, 2020).

### **Current status of Dairy Production in World**

Raw milk normally contains very low number of microorganism. Many bacteria usually present but bacterial count should be less than 10<sup>3</sup>cfu/ml. Microorganisms associated with food borne illness may contagious with raw milk supply through infected animals, environment and milking personal. It causes some major diseases such as Brucellosis and Tuberculosis. Milk can be significant source of the infection (Humayum et al, 2017). Bacteria related foods borne illness are destroyed by proper pasteurization (Javaid et al, 2009).

Sometimes post pasteurization can be occurred. Most of bacteria found in raw milk gram negative belong to genera *Pseudomonas* flavobacterium, *hromobacterium*, *akaligens coliforms* present (Muir, 1996). Adulterant food is very dangerous to human growth and development. It contains toxic chemicals. Adulterated milk has less nutrition value and toxic for public health also. To maximize the product milk dealers do dilution, extraction of valuable components like milk fat which is cream removed as cream, addition of cheap substances like starch to increase the value of total solids up to level which is acceptable by consumers (Humayun khan et al, 2017). Sometimes maximize the milk profit they use high amount of carbonates and bicarbonates can interfere with hormones signals that regulates reproduction and development. Levels of carbonates and bicarbonates must be kept constant otherwise higher alkaline values can cause systemic alkalosis, high blood pressure, renal failure, edema and cardiac failure. Formaldehyde is a toxic chemical that can kill bacteria and viruses as well as damage human cells. Manufacturers add this formaldehyde to extend the milk shelf life. Adding formaldehyde to foods forbidden in many countries (Shrishti et al, 2013).

Narawade GS conducted research on Effect of Godugdha (Cow milk) as a

rasayana-a randomized controlled clinical trial which contain 30 individuals. Trial and control groups were separated. Healthy individuals selected for this trial and Godugdha(Cow milk) and Cow milk powder Patanjali Ayurved were used. Trial group consumed Godugdha by boiling the milk properly. Control group consumed cow milk powder 1 teaspoon powder in 250ml boiled warm water properly. Mann-Whitney's U test applied to test efficacy of Godugdha and Cow-milk powder on objective parameter. P value is less than 0.05 in all case. Results revealed Godugdha is more effective than Cow milk powder. It has improved kshudha, twak, bala and Nidra and reduced ushama (Narawada, 2019).

#### METHODOLOGY

Mainly this review data was collected from The classical books mentioning the use of dairy products and their specific preparatory procedures were focused upon and scientific studies that help explain their action and efficacy are reviewed. Data from Ayurvedic classical books and articles from databases like PubMed, Scopus and Google Scholar were searched for this review.

#### **DISCUSSION**

Ayurveda has a unique approach and understanding of properties, actions and therapeutic values of Pasgorasa. A closer view has elaborated ayurvedic concept of milk and milk based products pharmacology and pharmacodynamics. Gorasa gives calories, water, protein, carbohydrates, sugar, fiber and fat. Consuming pasgorasa in daily basis enhance sattva guna. It has mentioned in ayurvedic text books lead good life (S et al, 2019). Acharyas mentioned about ksheera is important for all other products. Milk has casein has ability to increase the absorption of minerals such as calcium and phosphorus. Whey protein is

important for development of muscle (Kukkupuni et al., 2022). According to Ayurveda system, milk has unique nutrition that cannot be provide by other foods. It plays major role in development of human body (Sarkar et al, 2015). Scientific researches support Ayurveda texts therapeutic actions through experimental research analysis.

Qualities of milk depends on breed of milk and species, season, age of animal, environment and stage of lactation, level of milk production, disease and genetics. These factors affect the milk quality. Fat and protein content are high in early and late lactation while lower in mid and peak lactation. Season alter the quality of milk content. With the age cow milk protein level will be decreased. Apart from that some retailers add some ice in milk to keep it cool and prevent the spoilage (Humayun khan et al, 2017). Different species and breeds give various fats containing milk. It may depend on breed. Unhygienic milking practices also affect the milk quality. If the milk quality is not suitable milk dairy products quality go down (Chatterjee et al, 2006). Narawade, GS (2019) conducted clinical trial to find out effect of Godugdha (Cow Milk) as a rasayana. Raw cow milk and patajalai milk powder used. Natural Godugdha (Cow Milk) is showed better results than milk prepared from powder. Milk powder has become increasingly important product with wide range of end use. Hygienic quality of raw milk is one of the major factors which determine powder quality. Drying and storage conditions also determine the quality of milk powder (Decades of Research, 2018).

Traditionally prepared ghrta is containing highly valuable nutrients comparison to commercially available ghrta (Joshi 2014). Increase in DHA content of ghrta prepared by traditional method. Fermented milk has remarkable importance for maintenance of health, prevention and curing of several diseases. It has probiotic. It is best for

gastrointestinal tract diseases according to modern research. Acharya also stated takra and dadhi is good for grahani, gulma, mandagni /and medoroga. Best for this traditionally prepared takra and dadhi is good (Chaudhary and Jaiswal, 2016). Traditional food has unique and naturally healthy. Pasgorasa is everyone known traditional food. Milk and milk dairy products are available all over the world. Quality is unsure due to various factors. Unless cannot use it for therapeutically use. Milk is best rasayana. Rasayana prevent from lot of diseases. A healthy individual who consume milk every day is natural rejuvenator. It gives longevity, memory power, intellectual power, luster, complexion, voice, healthy body and sense organs, youth and brilliance (Narawada, 2019).

Around the worldwide shift towards a diet which has high in fat and processed foods and low in fiber, with corresponding increases in degenerative diseases, non-communicable diseases are reported. 70% of global deaths, majority deaths are developing countries. Westernization of diet and lifestyle is associated prevalence of chronic diseases such as cardiovascular, cancer, chronic diseases, diabetes and other Non-communicable diseases (Permani, 2018). Pasgorasa therapeutic analysis clearly shows above mentioned diseases can be prevented.

## CONCLUSION

Pasgorasa has proven source of nutrients and preventer from disease conditions. Ancient Acharyas mentioned importance of Pasgorasa and traditional preparation method. Traditional food always has unique preparation, high nutritional value, balance diet, physical development and mind. But present era use of modern agriculture system influence the quality of Pasgorasa especially quality of milk. Because milk

based dairy products also depend on quality of milk. Review has emphasized traditionally prepared products showing significance results comparison to commercially available products. Utilization of this commercially available low nutritional product does not complete body nutritional requirements. Prevalence of diseases especially non communicable diseases increases over the time. Ultimate goal of Pasgorasa according to Ayurveda Daily consumption of Pasgorasa with good quality, specific dosage and suitable season is best preventive and curative. To achieve that modern agriculture practice should be aware of Pasgorasa (Milk and milk based dairy products) production to meet the nutrient requirement and prevent non-communicable diseases best solution.

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