

Health Benefits Of Traditional Kitchen Utensils Composed Of Brass, Copper And Iron Using In Kitchen

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Abstract

The art of cooking is heavily reliant on the ability to combine, mix, and heat components. The heating materials are divided into two categories: the cooking tools and the type of heating agent (earlier charcoal, clay stove, later kerosene stove, gas stove, microwave etc). Food and cooking traditions in India have a long history, dating back over 5000 years. Our forefathers and mothers were used metal like brass, cast iron, copper or clay utensils for cooking. Ancient Indian cooking pots were once regarded as a traditional champion such as meal cooked on chulhas with traditional earthen cooking pots was tastier since the clay pots not only preserved the nutrition of the food like pulses and rice, but also added flavour to it. Despite the availability of new modern cookware with non-stick surfaces, steel, pressure cooker, plastic and anodised aluminium are unable to preserve nutrients of the food. There are various health benefits of using traditional kitchen equipment. For instance, cast iron utensils play a significant role in boosting the iron content of food, particularly in acidic foods. Copper has a one-of-a-kind ability to promote collagen in diet. Brass is excellent in retaining water and hence improves human immunity. Hence, the best and healthiest option for selecting cookware is to go back in time. This paper is emphasis on usage of traditional kitchen utensils like brass, copper and iron along with various health benefits in everyday life.

Keywords: Tradition, utensils, Brass, Copper, Iron, cast iron, tin coating, Health Benefits

Introduction

Human is evolved and nourished by food which has been given top priority since the Vedic period but, if our food is polluted that health concerns cannot be averted or controlled. Cooking pots and pans serve a purpose more than simply holding your meal. The substance it is made of has the potential to leach into the food being cooked. In today's society, people are busier than ever, and they've replaced the old

conventional technique with new quick cures, oblivious to the health risks they pose. The dangers of using plastic serving utensils in the kitchen are well known. Consider the cooking utensil one use; modern utensils release toxic, cancer-causing gases, making them harmful such as glass and steel are rather neutral, coated or non-stick pans may be harmful to your skin's health. During the cooking process, these cookware sets emit several harmful compounds like as Teflon, BPA, Aluminium, and others, which contaminate food and eventually reach the body, where they are associated to numerous ailments such as cancer, Alzheimer's disease etc. People have begun to use conventional cookware for their daily cooking needs that possess various therapeutic effects as they have become aware of the negative consequences of newer cooking utensils. For excellent health and well-being, Ayurvedic remedies recommend the use of bhasmas (ashes) of precious herbs, as well as metals and stones such as gold, silver, rubies, and emeralds. Ancient science has gained much importance for the metals used in cooking utensils that is not only related to cooking but provides holistic health, important for cleaning entire food cycle, remedy for cold, cough and fever along with most precious preserve the nutritious value of food. The FDA (Food and Drug Administration) states that materials used to fabricate utensils should not migrate into food. Traditional cookware included earthen pots, cast iron, glass, bamboo, and copper, as well as stone cooking sets. In the cooked dish, these added therapeutic value. The human body is described in ancient scriptures as a food store or a thing made of food; it is self-evident that "We are What We Eat." As a result, special care must be taken when selecting cooking equipment that are both safe and healthy. The following are some of the advantages of precious metals.

Iron is a vital mineral for body's development that aids in the formation of red blood cells. Iron deficiency can lead to adverse health concerns since it promotes the development of red blood cells. Furthermore, deficit in this mineral is frequent among mothers and children, although there are several ways to compensate. However, if diet is deficient in iron, body will naturally reserve 25% of the mineral to utilise in the production of more red blood cells. However, 25% is insufficient in the long run, which is why one must include an iron-rich diet.

Furthermore, over 70% of iron is located in haemoglobin and myoglobin; haemoglobin is known to transport oxygen from the lungs to all tissues, whilst myoglobin is found in muscle cells and is considered to allow oxygen to be released. It's worth noting that ferretting, which is located in body cells, stores 25% of body's iron naturally. Ferretting can preserve iron supplements for three years in men, but just one year in women. This is why women's anaemia is so common. Improving cognitive function, treating anaemia, supporting muscle, assisting oxygen circulation, increasing the immune system, and reducing weariness are all benefits of iron. Other advantages include treating restless leg

syndrome caused by iron deficiency, serving as a neurotransmitter, and aiding in the reversal of insomnia. Iron is also required to deliver oxygen to the organs; therefore, body should have adequate amounts. This manner, one'll stay active while avoiding other serious health issues. Further, only iron rich foods cannot be relied upon as a sole step to counter Anaemia. The utensil in which the food is cooked plays a major role in determining the final iron content of food. Most of the foods (90%) contained significantly more iron when cooked in iron utensils depending on the acidity, moisture content, and cooking time of food. The daily dietary intake could vary from 11 to 6 mg of iron if iron utensil was used for cooking. Thus, it is very necessary to cook in iron utensils but in today's society Teflon-coated utensils were used that were lighter and easier to clean, required no preparing (unlike traditional cookware), and could be stored easily. Steel and non-stick cookware, on the other hand, lack the heat resistance of cast iron and the tight grip of a clay or stone pot. Oils soon smoke in steel and non-stick tools, and their coating peels off after a few uses. Iron has traditionally been the favoured material for deep-frying, long before steel or Teflon entered the modern kitchen. The longevity, stability, and sustainability of traditional cookware easily outweigh the economic feasibility and attractiveness of modern cookware.

Importance of Cast Iron Cookware:

Cast iron produces by Smelting iron ore or pig iron (an intermediate result of iron ore extraction) or combining it with other alloys. After that, the liquid mixture is poured into moulds and allowed to harden. As a result, Cast Iron Cookware is created. Cast iron pots and pans must be well seasoned before they can be used. Because a firm coating of petrified oil covers the metal, the well-seasoned cast iron pan is nearly non-stick because cast iron pots and pans are not coated with synthetic materials that are hazardous to one's health, they require less oil when cooking. Cast iron cookware is versatile and may be used for a variety of cooking tasks. It's suitable for deep frying, roasting, and even baking. In addition to all of the advantages of iron, Cast iron vessels provide a number of advantages when it comes to cooking as they are relatively affordable and have a long lifespan. These utensils retain heat for a long period, extending the life of the food prepared in them. Cooking meals in an iron pot is usually recommended for iron deficient people since iron becomes impregnated with the food being cooked and provides the daily requirement of 18 mg of iron for an adult. According to studies, using cast iron minimises the prevalence of anaemia, which is the most common disease among women in India today. Cooking styles may differ across cultures and cuisines, but traditional cookware certainly impacts the outcome in more ways than one.

Hence, it is stated that People all across the world are becoming more conscious of traditional food and cuisine as a result of the importance of good health. It also discusses how India is promoting traditional kitchen utensils with great success. This article provides an overview of the traditional kitchen utensils and its health benefits in the fight against various deficiency and related illnesses.

Brass is basically called as "Pital" in Language Hindi which is made up of 70 percent copper and 30 percent zinc. Brass utensils are produced in practically every Indian state, with some centres being more significant than others. Moradabad is India's largest and most well-known city for brass products, which include brass utensils. Jagadhari, close to Yamuna Nagar and Jandiala Guru near Amritsar in the state of Punjab are some of the other major metallurgical centres in North India. Copper and zinc are abundant in brass. While copper is reddish in colour, brass is more yellow because of presence of zinc. Brass is non-magnetic, heat-conducting, long-lasting, and simple to deal with. Copper and zinc deficiency can cause a variety of illnesses, which can be avoided by using brass utensils in the kitchen or when serving meals. The benefit of cooking with brass utensils is that only 7% of the nutrients are lost throughout the cooking process and Worm infestations, cough, and other respiratory diseases are not caused by cooking and eating with brass utensils. Copper deficiency lowers the body's immunity, causes anaemia, skin problems, and deteriorates bone health. As a result, eating meals cooked in brass containers can naturally aid with immunity, blood haemoglobin levels, skin disease prevention, and bone strength. Children's growth is slowed and stunted due to a lack of zinc. It causes a decrease in the body's ability to fight infections, an increase in skin disorders, a loss of appetite, immunity, and sluggish wound healing. Therefore, having food or water in brass utensils, which have about 30% zinc component, prevents these diseases. Brass utensils are used for cooking non-acidic foods, such as rice and dal. Respective properties of copper and zinc metals are beneficial for health in many ways. All of these characteristics make it perfect for being turned into and utilised as culinary utensils.

Copper and iron were most likely two of the first metals that ancient people worked with. Copper is a trace mineral and an element that is necessary in our daily life. It is a necessary component of our everyday nutrition. Our forefathers and mothers, right up until our grandparents, practised the habit of preserving water in copper pots to keep it safe to drink. Several scientific investigations now back up this age-old practise that is mentioned in ancient Ayurvedic scriptures. A natural purifying process is created by storing water in a copper jar. It can eliminate any germs, moulds, fungi, algae, and bacteria in the water that are potentially detrimental to the body, making the water safe to drink. Its antibacterial,

antimicrobial, antioxidant, anti-carcinogenic, and anti-inflammatory properties are also becoming more essential in the fight against illness. Furthermore, water held in a copper jar for an extended period of time, preferably overnight or at least four hours, develops a certain quality from the copper. It also aids in the removal of pollutants. Drinking copper-enriched water first thing in the morning on an empty stomach, according to Ayurveda, helps balance all three doshas (Kapha, Vata and Pitta). Drinking 2 to 3 glasses of water stored in a copper vase is a simple way to get enough copper into body also guarantees that many organs and metabolic systems function properly. Copper water aids digestion, aids weight loss, aids wound healing, slows ageing, helps maintain heart health and beats hypertension, reduces cancer risk, protects against infections, regulates thyroid gland function, beats arthritis and inflamed joints, boosts skin health and melanin production, and beats anaemia.

Importance of Tin Coating (Kalai) on Brass and Copper :

Previously, silver was used, which became quite expensive. As a result, tin has been employed over the past 25-30 years. The deposition of metal tin on an alloy surface (brass or copper) is a conventional method of coating it. Tin-plating is required for brass and copper kitchenware every six to eight years. When a brass utensil is used for cooking, the metal copper in the alloy reacts with organic acids in the food to produce compounds that might cause food poisoning. As a result, kalai (white wash or tin) is necessary before using the utensil for cooking, as it protects both the instrument and the food in it. Copper utensils are common in homes because copper is an excellent heat conductor. Copper, on the other hand, cannot be used directly in cooking because it reacts with acidic or sour foods. Tin or another non-reactive metal must be used to line it. There must be caution here, as there have been allegations of contaminated materials being used to coat vessels, which can be dangerous. However, the improved flavour and nutrients are sufficient reasons to utilise them. Advantages of Tin coating protects brass from corrosion and improves conductivity, lowering fuel costs. It also preserves the taste of the food by re-tinning at regular intervals.







Figure: (A)Morture Pestle is made up from Brass. It is used for crushing ginger, garlic and nuts by maintaining their taste. (B)Bhagona is made up from Bronze. It is used to store water or any vegetables. It is one of the important kitchen tool.(C)Vessel is made up from Sarbloh /Iron which is necessary for making Daal that maintain iron level of the food (D)Handi made up from Copper to store water and for large food preparations. (E)Baltoi is made up from the metal Bronze which is using in large food preparation and also for food storage(F)Laddle from metal Brass is used to serve the food (any kind of

liquid or solid vegetable)(G)Flat Spatula is made up from Sarbloh /Iron which is important source of iron that is used to make food preparation like halwa(H)Griddle is made up from Sarbloh /Iron which is used to roast chapati and parantha(I)Fry Pan is made up from Sarbloh /Iron which is used in cooking for any tadka in vegatbale or dal (J)Terra pan is from Terra which is used to keep food item on table and in kitchen(K)TerraHandi is made up from MittiHandi which is used generally in home for making lassi and curd and butter.(L)Bowl is from metal Sarbloh which is used to keep small food item in kitchen(M)Kadhais made up of Sarbloh which is used to make any kind of food preparation that also provide iron to the food that will absorb in the body. Sarbloh is very necessary metal that save individual from anaemia and maintain haemoglobin level in the body.

Table: Benefits and Usage of Utensils

Utensils	Colour of utensil	Hindi Name	Benefits	Use	Reference
Iron	Charcoal Grey's	Loha	<ul style="list-style-type: none"> • Formation of red blood cells • Improves cognitive function, oxygen circulation to organs • Treats Anaemia, restless leg syndrome, reversal of insomnia • Enhance immune system 	Traditionally used for Deep frying	https://www.ritirwaz.com/cooking-utensils-and-health/
Copper	Reddish in colour	Tamba	<ul style="list-style-type: none"> • Water Purification • Eliminates germs, moulds, algae, fungi, and bacteria in the water • Its antibacterial, 	It helps to preserve water to make it safe to drink.	https://www.rustikcraft.com/metals-and-their-health-benefits/

			<p>antimicrobial, antioxidant, anti-carcinogenic, and anti-inflammatory properties.</p> <ul style="list-style-type: none"> • It aids in the removal of pollutants • It helps to balance all three doshas (Kapha, Vata and Pitta) • It aids digestion, weight loss, wound healing, slows ageing, maintain heart health, arthritis, inflamed joints, boosts skin health • It regulates thyroid gland function 		
Brass	More towards yellow	Pital	<ul style="list-style-type: none"> • It protects from worm infestations, cough, and other respiratory diseases • Copper and zinc deficiency can be taken care • It aids in immunity, haemoglobin levels, skin disease prevention, and bone strength • Used for cooking non-acidic foods such as rice 	It is perfect for culinary utensils	https://www.mokshamantra.com/brass-utensils-traditional-cooking-medium/

			and dal		
			<ul style="list-style-type: none">• only 7% of the nutrients are lost throughout the cooking process		

Objective of the study (to be check once)

- To complete a comprehensive review of the effect of cooking food in iron pots on haemoglobin concentrations and to measure pot use compliance.
- To complete a comprehensive review of the effects of cooking meals in brass pots on the skin and respiratory tract, as well as to assess pot use compliance.
- To carried out a systematic review of the effect of cooking meals in copper pots on Ayurvedic and antibiotic reactions, as well as to assess pot use compliance.

Limitations

- Traditional Utensils are heavy due to its durability and Longevity.
- It is time consuming to cook in traditional utensils as compare to other modern utensils
- Traditional Utensils have cooking limitation such as one can't able to cook tomato sauce in iron utensils which needs other specific utensils that alter the colour and taste of the food.
- Despite being one of the safest cooking utensils, cast iron requires extra maintenance because it is prone to rust.

Recommendation

- Cooking food in Brass and iron utensils has been proven to be the greatest technique to obtain all nutrients like calcium, iron, phosphorus, zinc and magnesium to the body.
- According to food experts, cooking in aluminium preserve only 13 percent but in brass 93 percent of nutrients
- The thickness of iron allows all of the nutrients to be retained; yet, cooking in rusty cookware is extremely harmful to the body.

- Copper aids digestion by detoxifying the body, increasing haemoglobin levels, and improving bile output and peristaltic motions.

Conclusion

Introducing or improving the use of iron pots for food preparation in communities in underdeveloped nations could be a potentially new strategy for lowering iron deficiency and iron deficiency anaemia. The only disadvantage of brass utensils is that they must be handled with caution when being washed. One should also avoid preparing too much acidic food. Copper aids digestion and aids in the production of bodily juices. Hence, there are various types of utensils for the kitchen used in cooking or while eating have their own pros and cons. The utensils that you use should help you gain the utmost advantage of what you are eating. All you need to do is be a little more careful in choosing the type that's most durable and safe for your health.

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Declaration

- Availability of data and materials

All the data and materials will be shared

- Competing interests

No competing interest

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- Authors' contributions

Chef Jaswinder Singh : Drafting of manuscripts and Collection of raw Pictures

Bharti Goel : preparation and Refining of data

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