



## A Comprehensive Review on Chocolate as Aphrodisiac Food and Some Ingredients make Chocolate more Aphrodisiac, 2021

**Bommisetty<sup>1</sup>, D V S S Mani Deep Gupta<sup>2</sup>, M. Chandrika<sup>3</sup>, Raamesh M<sup>4</sup>**  
School of Food Technology, Jawaharlal Nehru Technological University Kakinada,  
Andhra Pradesh, India,533003

**Abstract:** *Aim. To review chocolate as an Aphrodisiac food and some ingredients that make chocolate more aphrodisiac.*

*Methods and Materials. A search with keywords Chocolate, Aphrodisiac foods, walnut, Libido, honey, maca root and honey was done across PubMed literature and several review articles of various journals.*

*Conclusion. Finally concluded by reviewing chocolate as aphrodisiac food, reviewed aphrodisiac properties of chocolate, walnut, honey, maca root and ginseng along with their other health benefits.*

*Bommisetty D V S S Mani Deep Gupta - A Comprehensive Review on Chocolate as Aphrodisiac Food and Some Ingredients make Chocolate more Aphrodisiac, 2021.*

**Key words:** *Chocolate, Aphrodisiac Foods, Honey, Walnut, Maca root, Ginseng*

### **Introduction:**

The most common thing that every individual aged between 16 to 60 irrespective of their gender is to think about how to increase their personality both physical as well as mental and how to increase their libido. Especially during their adult age, these individuals search for various supplements to enhance their libido but all the supplements are not suitable for everyone also very less efficient. Many supplements are having side effects and more importantly, these all are from pharmaceutical sources. So the people are seeing for a natural way to enhance their libido, there the aphrodisiac foods came into the picture. The aphrodisiac foods are available in natural form, with less or fewer side effects and more importantly, most are from herbal sources which also have other health benefits along with boosting the libido. The only thing that lacks for aphrodisiacs

are there is no regulatory body to foresee the production of these. But the aphrodisiacs are using since the ages and also written about these in various Ayurvedic Books. Chocolates are the most consumed food globally and loved by everyone. Market demand for chocolates is increasing with a CAGR of around 12.8% in India and 4.5% globally according to Mordor intelligence reports. Chocolates is a natural aphrodisiac and by replacing some ingredients mainly for boosting libido and also for other health benefits attracts more people and market can be increased further. This article mainly aims to review the use of chocolate and chocolate made with some selected ingredients to use as an aphrodisiac food and to review the market of these aphrodisiac chocolates in India.

### **Aphrodisiac Foods:**

The term aphrodisiac refers to any food substance either solid or liquid the



stimulates or enhances sexual desire and performance which is nothing but libido, when it is consumed. Sometimes a drug also can be considered as an aphrodisiac when it shows similar properties mentioned above (libido) when consumed. According to FDA “any product that bears labelling claims that it will arouse or increase sexual desire, or that it will improve sexual performance”<sup>1</sup> is called an aphrodisiac. There some hundreds of aphrodisiac foods which are ready to use by mankind, most of them are from herb sources. The most powerful and promising aphrodisiacs are maca root, yohimbe, safed muesli, red ginseng, chocolate etc...

#### **History:**

The story of chocolate began 4000 years ago with the early Olmecs of Mesoamerica which is now Mexico. Latin America’s oldest civilization “The Olmec” is the first one to turn cocoa into chocolate. “Xocolatl” means the bitter water a thick foamy beverage created by the Mayans. Mayans used cornmeal, water, chillies and roasted cocoa beans to make that bitter water.

The Aztecs of the 15<sup>th</sup> Century used cocoa beans as the currency and they believed that their god “Quetzalcoatl” gifted chocolate to them and used to drinking it before the war as an aphrodisiac and a refreshing beverage. One of the first greatest lovers in the history of mankind an Aztec ruler Montezuma was the first one who understood the strong aphrodisiac strengths of the chocolate and even there is a rumour that he drinks around 3 gallons of the “cocoa elixir” a drink made with cocoa to increase his libido. In 1528 an explorer named Hernán Cortés brought this chocolate to Spain. The Spanish were the ones who first mixed this cocoa with honey (another aphrodisiac) to make it sweet and it became very popular among the wealthy

and even they used it in their religious prayers. During a scientific expedition in 1570 in Spain which is conducted to study the native flora like various herbs and several medicinal plants, they came to know that a drug named “atextli” was made by making cocoa and corn into a very fine paste to which *tlilxochitl* (*Vanilla planifolia*) and *mecaxochitl* (*Piper sanctum*) are added and used as an aphrodisiac to boost the libido<sup>2</sup>. In 1615 a French king married a daughter of a Spanish king and the Spanish famous chocolates are first stepped into Europe. In 1828 the first chocolate press was invented and it revolutionised the manufacturing process of chocolate by adding cocoa butter, ground cocoa nibs and sugar. From Europe, Chocolate became world-famous. Initially, cocoa is used to treat hundreds of diseases such as fever, liver diseases, stomach disorders, tuberculosis, kidney disorders, chest ailments etc... and even it's mentioned in some 16<sup>th</sup> century Mexican manuscripts. In 1613 Colmenero de Ledesma in his book “The Curing Chocolate of Antonio Colmenero de Ledesma” mentioned that drinking chocolate helped to enhance the lovemaking and people used chocolate even in their marriages as to consider that it will help them in lovemaking and for stronger relationship<sup>3</sup>. In the 18<sup>th</sup> century, Carl Von Linneaus identified chocolate as the excellent aphrodisiac<sup>2</sup>. In 1900 one of the leading chocolatiers Russel Stover based on the history of chocolate made the chocolate boxes heart-shaped during valentines week and from then slowly the modern era considered the chocolate as the “Symbol of Love”.

#### **Chocolate as Aphrodisiac food:**

The base and key ingredient for chocolate is cocoa seeds which come from *Theobroma cacao* trees. Chocolate is a confectionery product that is prepared by



grinding the roasted cocoa seeds to make a liquid and sugar powder and other flavouring ingredients are added accordingly to make into a thick paste and then moulded. The main thing in the Chocolate is PEA which is nothing but the phenylethylamine ( $C_6H_5(CH_2)_2NH_2$ ) which directly acts on the central nervous system so that it helps to reduce the stress and can be considered as the key substance that makes the chocolate aphrodisiac. The phenylethylamine boosts the stimulation of the hypothalamus which regulates the releasing of hormones in the human body. Due to the effect of PEA on the hypothalamus, it releases serotonin and endorphins commonly called happy hormones that helps in enhancing the mood and gives pleasurable sensations. The effect of this serotonin and endorphins are more susceptible in women, so the women love to eat more chocolates than men <sup>4,5</sup>. Along with the phenylethylamine, some other biogenic amines such as tyramine, methylxanthine and some fatty acids like cannabinoid-like substances and N-acylethanolamine compounds are also present in chocolate that gives the chocolate its aphrodisiac abilities <sup>6</sup>. The cannabinoid-like substances present in the chocolate produces anandamide which is similar to the compound released by marijuana, the anandamide gives a high feeling to the consumed person when it got breakdown by the enzyme hydrolase which is released by the human body <sup>7</sup>. The normal milk chocolate contains minimum of 10% to maximum of 50% cocoa solids but dark chocolate should contain a minimum of 50 to 90% of cocoa solids. Dark chocolate is considered more aphrodisiac than the other ones due to more cocoa content and less sugar added as compared to normal chocolates.

### **Ingredients that make chocolate more aphrodisiac:**

Various aphrodisiac ingredients can be added to chocolate that makes it more aphrodisiac, but among them, walnut, honey, maca root, ginseng can be considered as the best and even they can be replaced with the traditional ingredients which are having similar properties and even more benefits so that it somehow helps the chocolate to develop some aphrodisiac properties and helps to boost the libido.

#### **Walnut:**

Scientific name of walnut is *Juglans Regia*. Walnut is also very famous in the name of Royal Nut and mostly used by Romans. The Walnut can be used in chocolate in the form of roasted nut. The addition of walnut into chocolate can replace the use of other nuts such as cashew nuts, peanuts etc... as they just only give taste and little energy, where are the walnuts have several more beneficial properties than other nuts as the walnuts have the Omega-3- fatty acids, Vitamin E, several dietary fibres and most importantly the walnuts are rich in polyphenols than compared to other nuts. Polyphenols are having so many health benefits includes cardiovascular system dysfunction, Metabolic syndrome, which helps in neuroprotection, diabetes and cancer. The pedunculagin is the main polyphenol present in walnut. Walnuts are considered the seventh-largest source of the total polyphenols present among all the common foods. Ellagitannins are the main antioxidants that are present in walnut that helps to remove the toxins present in the bloodstream and helps to increase the flow of blood <sup>8</sup>. Most importantly the arginine content of the walnut increases the semen quality, increases the sperm count and helps the infertile men to become fertile when they



add a specific quantity of walnuts to their everyday diet<sup>9</sup> this helps to boost the libido property. Based on the above-mentioned things addition of walnuts in any form to chocolate gives some health benefits as well as increase the aphrodisiac nature of the chocolate and enhances libido. So walnuts can be used as an ingredient in chocolate to make it a better aphrodisiac.

#### **Honey:**

Honey is a sweet secretion secreted by bees of Apis family after taking nectar from flowering plants. Honey is considered as one of the ancient sweeteners around the world, and in some areas, honey is considered as the divine substance that directly comes to earth from heaven due to its taste, health benefits and other properties. In some of the ancient religious and other books like Bible and Kamasutra, it is mentioned about honey as a symbol of romance and the name honeymoon came from the word itself. Since then the honey is used as a natural aphrodisiac and also for other health benefits. In 500 BC Hippocrates who is a great Greek philosopher and considered as the father of modern medicine wrote about honey in his various books of ancient medicine that honey as the golden nectar acts as a stimulant and increases sexual vigour and helps infertility. Even in the 10<sup>th</sup> century AD, a famous polymath of Persian Avicenna had described honey as “the food of foods, the drink of drinks, and the drug of drugs”, Due to its vast health benefits and taste. In his writings, he also mentioned that honey mixed with ginger and pepper helps to cure impotence. The most abundant particles of honey are Vitamin B complex and Boron, the B Vitamins are known for their benefits such as monitoring the health and helps in well being. Honey contains around 0.6% of Boron. The Boron

is a trace mineral but it is the main mineral used for the building of strong bones and improves co-ordinations in muscle. The Boron also helps the body for the proper regulation of oestrogen and testosterone<sup>10</sup>. Nitric acid another substance present in honey that is the chemical root cause for penile erections, the nitric acid also have other health benefits such as preventing cardiovascular diseases by increasing the bloodstream and helps in energy retention<sup>11</sup>. Important of all that honey is a sweetener that can be used as a replacement for sugar which is having a high amount of carbohydrates and reduces vitality. Based on the above-mentioned benefits of honey and honey benefits over sugar, the honey can be used in chocolate to replace sugar and also to increase the chocolate aphrodisiac properties.

#### **Maca root:**

Maca is a plant belongs to the Brassicaceae family and found in the region of Andes in South America. Maca root is the most nutrient part of plant and it has about 10% to 18% of protein, 59% to 76% of Carbohydrates, other free amino acids and it contains almost all the important minerals. Maca root is made into powdered form and used in many processed foods due to its health benefits and other properties<sup>12</sup>. Maca root from ancient times known for the fertility, initially during 1500s maca root is used to treat cattle to increase their fertility later slowly in mid The carbohydrates present in the maca root has both water soluble fibre and water insoluble fibre so that the maca root can act as emulsifier. Emulsifiers plays a important role in chocolate in binding all the ingredients added especially emulsifiers helps in binding fats with other substances<sup>13</sup>. Daily dosage of 1.5 to 3 grams of Maca root powder could increase the serum



testosterone levels in male which enhances libido<sup>14</sup>. By considering all the above mentioned things maca root done into powdered form can be used in chocolates by replacing the traditional emulsifiers and also it increases the aphrodisiac properties of chocolate.

#### **Ginseng:**

There are two types of ginseng, Panax Ginseng (American) and Withania somnifera (Indian Ginseng). Both are well known for their similar health benefits and other properties. Among them Indian Ginseng has a history of around 6000 years in Rasayana, it is commonly called as Ashwagandha. Ashwagandha is considered as the most powerful aphrodisiac, stimulant and diuretic. Ashwagandha root is ground into fine powder and mixed with either honey or ghee taken for healthy reproductive and sexual balance<sup>15</sup>. Even the Chinese used this in around 3500 to 2600 BC to treat sexual impotence and erectile dysfunction, even today so many people around the world uses ginseng to treat erectile dysfunction. Shen Nung who is considered as the Father of Chinese medicine mentioned about these benefits of ginseng and the root is used to chew to treat erectile dysfunction and increases the libido in his writings<sup>16</sup>. The ginseng has abundant amount of nitric oxide (the main chemical behind penis erections) and when its taken acts on central nervous system modulates several hormones further increases spermatogenesis which increases sperm quality and count, erection, male fertility<sup>17</sup>. Addition of Ginseng to chocolate will make chocolate more aphrodisiac.

These four ingredients walnut, honey, maca root and ginseng can be added during the manufacturing of chocolate either by substituting traditional ingredients or by replacing them. No

special care or requirements are necessary for addition of these ingredients.

#### **Conclusion:**

The need for natural aphrodisiac foods in increasing globally, chocolate a natural aphrodisiac having already a strong global market with increasing CAGR, by adding some more aphrodisiac ingredients will make chocolate more aphrodisiac and also provide other health benefits associated with them. Walnuts increases the semen quality, sperm count and increases fertility. Honey can replace sugar, also due to presence of boron and nitric acid helps to increase bone strength and enhances penile erection. Maca root can act as emulsifier as well as boosts serum testosterone levels and increases fertility. Ginseng acts as good stimulant and balances health and reproductivity as well as prevents and cures erectile dysfunction. All the four ingredients helps to boost libido and increases the pleasure. To conclude this chocolate is a aphrodisiac and addition of these ingredients increases the chocolate aphrodisiac properties and imparts their own benefits to the end customer.

#### **References:**

1. Melnyk JP, Marcone MF. Aphrodisiacs from plant and animal sources-A review of current scientific literature. *Food Res Int.* 2011;44(4):840-850. doi:10.1016/j.foodres.2011.02.043
2. Lippi D. Chocolate in history: Food, medicine, medi-food. *Nutrients.* 2013;5(5):1573-1584. doi:10.3390/nu5051573
3. Grivetti LE, (University of California). From Aphrodisiac to Health Food: A Cultural History of Chocolate. *Karger Gaz.* 2005;n°68(68):1-14.
4. Salonia A, Fabbri F, Zanni G, et al. Chocolate and women's sexual health:



- An intriguing correlation. *J Sex Med.* 2006;3(3):476-482.  
doi:10.1111/j.1743-6109.2006.00236.x
5. Eo A. Cocoa and chocolate consumption - Are there aphrodisiac and other benefits for human health? *South African J Clin Nutr.* 2008;21(3):107-113.  
doi:10.1080/16070658.2008.11734163
  6. West E, Krychman M. Natural Aphrodisiacs-A Review of Selected Sexual Enhancers. *Sex Med Rev.* 2015;3(4):279-288.  
doi:10.1002/smrj.62
  7. Di Tomaso E, Beltramo M, Piomelli D. Brain cannabinoids in chocolate. *Nature.* 1996;382(6593):677-678.  
doi:10.1038/382677a0
  8. Sánchez-González C, Ciudad CJ, Noé V, Izquierdo-Pulido M. Health benefits of walnut polyphenols: An exploration beyond their lipid profile. *Crit Rev Food Sci Nutr.* 2017;57(16):3373-3383.  
doi:10.1080/10408398.2015.1126218
  9. Masterson JM, Kim HH, Robbins WA. Walnuts Improve Semen Quality in Infertile Men: a Randomized Control Dietary Intervention Trial. *Fertil Steril.* 2020;114(3):e23-e24.  
doi:10.1016/j.fertnstert.2020.08.092
  10. Pizzorno L. Nothing boring about boron. *Integr Med.* 2015;14(4):35-48.
  11. Bogdanov S, Haldimann M, Luginbühl W, Gallmann P. Minerals in honey: Environmental, geographical and botanical aspects. *J Apic Res.* 2007;46(4):269-275.  
doi:10.1080/00218839.2007.11101407
  12. Rondán-Sanabria GG, Finardi-Filho F. Physical-chemical and functional properties of maca root starch (*Lepidium meyenii* Walpers). *Food Chem.* 2009;114(2):492-498.  
doi:10.1016/j.foodchem.2008.09.076
  13. Wu L, Zhang M, Xin X, Lai F, Wu H. Physicochemical and functional properties of a protein isolate from maca (: *Lepidium meyenii*) and the secondary structure and immunomodulatory activity of its major protein component. *Food Funct.* 2019;10(5):2894-2905.  
doi:10.1039/c8fo02490a
  14. Gonzalez GF, Córdova A, Vega K, Chung A, Villena A, Góñez C. Effect of *Lepidium meyenii* (Maca), a root with aphrodisiac and fertility-enhancing properties, on serum reproductive hormone levels in adult healthy men. *J Endocrinol.* 2003;176(1):163-168.  
doi:10.1677/joe.0.1760163
  15. Singh N, Bhalla M, de Jager P, Gilca M. An overview on Ashwagandha: A Rasayana (Rejuvenator) of Ayurveda. *African J Tradit Complement Altern Med.* 2011;8(5 SUPPL.):208-213.  
doi:10.4314/ajtcam.v8i5S.9
  16. Nair R, Sellaturay S, Sriprasad S. The history of ginseng in the management of erectile dysfunction in ancient China (3500-2600 BCE). *Indian J Urol.* 2012;28(1):15-20.  
doi:10.4103/0970-1591.94946
  17. Leung KW, Wong AS. Ginseng and male reproductive function. *Spermatogenesis.* 2013;3(3):e26391.  
doi:10.4161/spmg.26391