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Effective way of Boosting Immunity for reducing COVID-19 through Agnihotra Arginine Vapors

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Abstract

Arginine is an essential amino acid for humans and animals that is a precursor for Nitric Oxide in the body. Immunity of the human body can be increased through Arginine and Nitric Oxide. Arginine pills are available for oral intake that boosts immunity of the human body. Agnihotra is a combustion process of prescribed food materials like cow ghee, butter, nuts, grains, herbs, etc., that provides immunity for COVID-19 like viruses. Agnihotra Arginine vapors are 100% effective, faster action, and economical than the pills apart from other benefits like reduction of air pollution, virus/bacteria count, etc.

Keywords: Arginine, Agnihotra, Immunity Boosting, COVID-19 protection.

Introduction

Arginine ($C_6H_{14}N_4O_2$) is an essential amino acid that makes proteins in the body and at human body pH it is an aliphatic amino acid with a charge [1]. and can be found in many food materials such as nuts [2], cow butter, ghee [3], grains [4], legumes [5], etc. Nitric oxide (NO) in the human body is made from arginine [6] and causes improved blood flow in the vessels of lungs [7], relaxes smooth muscles of respiratory, genito-urinary, cardiovascular, and gastrointestinal, involves in cytotoxicity, and neurotransmission [8]. Nitric oxide proved to decrease erectile dysfunction [9], stimulates insulin gene promoter [10]. In various physiological processes [11] Nitric Oxide mediated signaling is a recognized component such as immune defense, inhibition of leukocyte aggregation and platelets. NO has many uses in inflammatory diseases such as arthritis, myocarditis, colitis, and nephritis. It is found that Nitric Oxide is used in pathologic conditions such as diabetes, amyotrophic lateral sclerosis, neurodegenerative diseases, and cancer.

Arginine stimulates growth hormone [12], decreases high blood pressure [13], etc. In many treatments of the human body [14] problems such as coronary artery disease, recurrent pain in the legs, chest pain, common cold, decreased mental conditions in the elderly, improving kidney function, congestive heart failure, male infertility, high blood pressure, erectile dysfunction, boosting immune system, diabetes, skin problems, etc., use arginine. Clinical research in humans shows that additional benefits of arginine can be extracted if taken orally but the limit was set at 20 g/day [15].

Agnihotra is a process in which food materials such as ghee, butter, nuts, herbs, etc., are combusted in a specially designed brazier/combustion chamber [16] with the help of wood sticks from chosen trees such as banyan, mango, etc. The smokes thus evolved are useful in reducing air pollution [17], increasing rainfall [18], reducing waterbodies pollution [19], reducing COVID-19 like viruses and increasing immunity [20], reducing pollution due to cement factory [21], etc.

Materials and methods

In this paper increasing immunity by combustion of ghee, grains, butter, nuts, etc., in the Agnihotra process will be presented. As discussed, we know the benefits of Arginine and Nitric Oxide for humans and how these compounds can increase immunity in humans, we rely on the amount of Arginine that each material can produce during combustion process in

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Agnihotra, and the benefits thereof. The amount of Arginine present in these materials (ghee, butter, nuts, herbs, etc.) is shown in Table – 1.

Table 1: Amount (grams) of Arginine present in different food materials for 100 grams.

Food Material	Amount in grams/100 grams	Reference
Ghee	0.007	Ref. (3)
Butter	0.031	Ref. (3)
Barley	0.526	Ref. (22)
Dried Walnuts	3.618	Ref. (23)
Almonds	2.465	Ref. (24)
Pine Nuts	2.413	Ref. (25)
Peanuts	3.085	Ref. (26)

It is well known that vapors hit the bloodstream faster than edible materials or liquids that are consumed. Therefore, when food materials mentioned above are combusted (burned) along with ghee as in Agnihotra, the compounds in these materials split and become vapors. These vapors are inhaled by the persons in the surroundings and increase their immunity due to Arginine present in the food. The advantage with the Agnihotra is that these vapors help more living beings than consuming them as solids or as liquids.

Agnihotra is performed in a hollow inverted truncated pyramidal brazier/combustion chamber (Fig. 1) with the help of wood sticks, ghee, nuts, grains, herbs, etc.

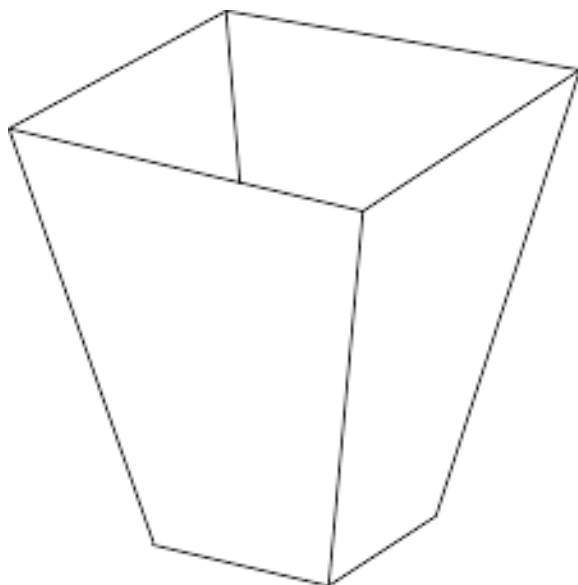


Fig. 1: Brazier/Combustion Chamber for Agnihotra.

Wood ticks of appropriate size are placed in the combustion chamber and kindled with camphor. Appropriate amount of pure organic cow ghee is offered in the combustion chamber at regular intervals of time. When the fire is appropriate for burning food materials, small quantities of nuts, grains, herbs, etc., are offered along with ghee. Care is taken to see that fire is always present by introducing wood sticks, ghee at regular intervals of time. The food materials offered in the combustion chamber burn and release vapors containing molecules of different compounds. Table -2 gives the details of the materials burnt (combusted) in the combustion chamber for obtaining the results.

Table 2: Food materials, quantity that were offered, and Arginine quantity present.

Food Material	Quantity in grams	Arginine in grams
Cow Ghee	500	0.035
Cow Butter	100	0.031
Barley	500	2.63
Dried Walnuts	200	7.236
Almonds	200	4.93
Pine nuts	100	2.413
Peanuts	100	3.085
Total	1700	20.36

The daily intake limit of arginine is about 20 g/day [15] and so the food materials are chosen as given in Table – 2. But the maximum available amount is in vapor form and not in pills form. In pharmacies the arginine pills are available in doses of 500 mg to 3000 mg. The temperature in the combustion chamber depends on the number of sticks and amount of ghee that is offered. In this experiment the temperatures could range from 200⁰ C to 1000⁰ C depending on the time at which the measurement is done during the process. The boiling point of Arginine is about 368⁰ C and since the food materials are combusted in an open combustion chamber, Arginine boils out of the parent material at its boiling point and becomes into vapor form. Arginine may not further decompose into other compounds as the vapors are not inside a closed chamber to receive further heat for decomposition. These Arginine vapors spread in the vicinity of the combustion process and are inhaled by all living beings.

Results & Discussion

The total volume of the Arginine that is produced during this process can be obtained from simple gas equation

$$PV = \frac{mRT}{M} \text{ ----- (1)}$$

Where, ‘P’ is atmospheric pressure (since the combustion chamber is open), ‘V’ is the volume of the gas, ‘m’ is the mass of the gas, ‘M’ is the molecular mass of the gas, and ‘T’ is the temperature of the gas.

$$V = \frac{20.36 \times 8.314 \times (368+273)}{174 \times 101325} \text{ ----- (2)}$$

$$V = 0.0062 \text{ m}^3 \text{ -----(3)}$$

$$V = 6.2 \text{ liters} \text{ -----(4)}$$

Each human inhale about 350 ml of air during each inhalation that contains about 20% oxygen and 79% nitrogen. The process of Agnihotra for the quantity of materials mentioned above will take about 70 to 80 minutes. Expecting normal breathing, each person’s rate of breathing is about 15 per minute. Therefore, each person in the vicinity will intake about 1050 to 1200 inhalations or about 367.5 L to 420 L of air. Each minute 3 times the food materials are offered and the total offerings during the 70 minutes time are about 210 offerings.

The amount of Arginine produced per offering of the materials.

$$\frac{\text{Total Arginine}}{\text{Total Time}} = \frac{20.36 \text{ g}}{210} = 0.097 \text{ grams} \text{ -----(5)}$$

As per the available Arginine in the form of pills has a minimum pill of 500 mg and maximum of 3000 mg. That means each person can take about 0.5 gram to 3 grams pill per day. Each bottle can have from 50 to 120 pills and may cost from \$10 to \$25 per bottle.

The amount of Arginine available in air is about 97 mg per each offering of the food material for combustion and a total of 20.36 grams. Therefore, for each of the Agnihotra process with the above said quantity of food materials, the number 'N' of human beings that can be benefitted can be calculated as.

$$N = \frac{20.36}{0.5} = 40.72 \text{-----(6)}$$

Conclusions

Since the Arginine is in vapor form it is possible that a greater number of people can inhale the vapors but in less quantity. Since the vapor intake is 100% effective and faster, but the pill intake is roughly 20% effective and slow, it is highly recommended that the Arginine is taken in vapor form as in the process of Agnihotra. Along with the benefits of immunity boosting for COVID-19 like viruses, we have other benefits such as reduction in air pollution, reduction in virus/bacteria count, reduction in water pollution, etc., Agnihotra process is highly recommended for the Arginine intake rather than in pill form.

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