



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

International Journal of Recent Scientific Research
Vol. 7, Issue, 9, pp. 13245-13247, September, 2016

**International Journal of
Recent Scientific
Research**

Research Article

BENEFITS AND NUTRITIVE VALUE OF SESAME SEED

Jaya Singh, Neelma Kunwar and Smita Tripathi

Chandra Shekhar Azad University of Agriculture and Technology, Kanpur (India)

ARTICLE INFO

Article History:

Received 05th May, 2016

Received in revised form 08th July, 2016

Accepted 10th August, 2016

Published online 28st September, 2016

ABSTRACT

India is the largest producer of sesame in the world. During 2004, India contributed 27.75 % of the total area under sesame seeds and 20.88 % of total world production. It has been noticed that during the year 2003-2004, Gujarat alone contributed 30 per cent of total production followed by West Bengal (17.8%), Rajasthan (17.6%), Tamil Nadu (7.6%), Andhra Pradesh (5.4%) and Madhya Pradesh (5.2%). In the case of area, Gujarat stood first with 22.7 per cent followed by Rajasthan (17.6%), West Bengal (9.2%), Andhra Pradesh (9%) and Madhya Pradesh (7.4%). However, in productivity, West Bengal ranked first with 876 kg per hectare followed by Gujarat 598 kg per hectare and Rajasthan 453 kg per hectare.

Copyright © Jaya Singh., Neelma Kunwar and Smita Tripathi., 2016, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Sesame is cultivated in all seasons namely *kharif*, *pre-rabi*, *rabi* and summer. It is grown in more than one season in some parts and in all the seasons in other parts of the country. It is a short duration crop and fits well in a number of multiple cropping systems either as a catch crop or a sequence crop. The many health benefits of sesame seeds are due to its nutritional content, including vitamins, minerals, natural oils and organic compounds which consist of calcium, iron, magnesium, phosphorus, manganese, copper, zinc, fiber, thiamin, vitamin B₆, folate, %, and tryptophan.

choice for vegans as it is often reported that they don't get sufficient amount of iron and zinc in their diet.

- Sesame seeds protect our body from free radicals. Phytic acid present in these seeds inhibits colon cancer.
- These seeds contain sesaolion and sesamin, components that may help lower cholesterol levels and improve heart health.
- These components are also a good source of omega-6, vitamin E and monounsaturated fats that prevent furring of arteries and skin elasticity.

Table 1 Important assembling markets of sesame seeds in different states

Sl.No.	State	Important markets
1.	Andhra Pradesh	Hiramandalam, Rajam, Vizianagaram, Narasipatanam, Narasaraopet, Guduru, gudur, Kadapa, Chennur, Warangal, Tirumalagiri, Khamman
2.	Bihar	Patna City, Muzaffarpur, Gaya, Betiah
3.	Gujarat	Rajkot, Amreli, Bhavnagar, Bhuj, Jamnagar, Junagadh, Surendranagar
4.	Karnataka	Bangalore, Chitradurga, Harapanahalli, Mysore, Kadur, Arsikere, Kottur, Lingasugur, Kusthagi, Raichur, Bellary, Bidar, Bijapur.
5.	Madhya Pradesh	Sehore, Harda, Indore, Bhikangaon, Burhanpur, Khargone, Sabalgarh, Seopurkala, Ajaygarh, Tikamgarh, Chhatarpur, Damoh, Raipur.
6.	Maharashtra	Jalgaon, Bodwad, Yawal, Khamgaon, Chopda, Pachora, Dhule, Ahmedpur, Chalisgaon, Dharagaon.
7.	Orissa	Jalewar, Balasore, Baripada, Cuttak, Bolangir, Berhampur
8.	Rajasthan	Hanumangarh, Ganganagar, Alwar, Bharatpur, Pali
9.	Tamil Nadu	Erode, Salem, Villupuram, Virdhachalam, Tiruchirapalli, Cuddalore
10.	Uttar Pradesh	Ghaziabad, Hapur, Agra, Kanpur, Mahoba, Sitapur, Madhoganj, Hardoi, Gorakhpur, Jalalabad
11.	West Bengal	Bishnupur, Tamluk, Arambag, Karimpur, Kalna, Katwa, Islampur, Bongaon, Baduria, Shantipur, Nalhati, Rampurhat, Burdwan

Benefits of sesame seeds

- Sesame seeds help in digestion stimulates blood circulation and benefits the nervous system.
- Sesame seeds are the richest source of iron and zinc, including sesame seeds in diet would be an ideal

- The compound sesamin protects your liver from oxidative damage.
- Sesame seeds are the best source of calcium that contains far more calcium than dairy. A ½ cup of

*Corresponding author: **Jaya Singh**

Chandra Shekhar Azad University of Agriculture and Technology, Kanpur (India)

sesame seeds contains 3 times more calcium than A ½ cup of whole milk.

- Sesame seeds help relieve constipation. Just eat some seeds if you have constipation to relieve it.
- Eat some sesame seeds to remove worms from the intestinal tract.
- Sesame oil effectively treats cracked heels. Apply the oil on heels after cleaning the area thoroughly before sleep in the night.

Table 2 Nutrients in sesame seeds (100 g)

Energy (Calories)	578	Fe (mg)	9.6
Moisture (%)	4.7	Na (mg)	2
Fat (g)	51.9	K (mg)	400
Protein (g)	19.8	Vitamin A (IU)	0
Carbohydrate (g)	18.4	Carotene (µg)	17
Fiber (g)	10.8	Vitamin B ₁ (mg)	0.95
Ash (g)	5.2	Vitamin B ₂	0.25
Ca (mg)	1200	Niacin (mg)	5.1
Mg (mg)	370	Vitamin C	0
P (mg)	540		
Palmitic acid	5700 mg		
Stearic acid	1600 mg		
Oleic acid	19.9 g		
Linolic acid	18.7 g		
Linoleic acid	670 mg		
Saturated fatty acid	6.7 g		
Unsaturated fatty acid	8.5 g		
Monounsaturated fatty acid	18.7 g		
Polyunsaturated fatty acid	21.8 g		
Sesaminol (mg)	32-298		
Sesamolionon (mg)	tr-58		
Sesaminol glycoside	88.3 mg		

METHODOLOGY

The study was conducted in U.P. state in India. Kanpur is a major district of U.P. state. Kanpur district is divided into 6 zones. Total ten localities were selected in this study. Total 300 sample sizes were selected (150 male and 150 female). Dependent and independent variables were used such as age, caste, education, dietary habits, B.M.I., Indian meal. The statistical tools were used such as mean, Cr. χ^2 .

RESULTS

Table 3 Distribution of respondents according to religion

Type of house	Male	Female	Total
Hindu	84 (28.0)	98 (32.7)	182 (60.7)
Muslim	34 (11.3)	22 (7.3)	56 (18.6)
Sikh	19 (6.3)	20 (6.7)	39 (13.0)
Christian	13 (4.4)	10 (3.3)	23 (7.7)
Total	150 (50.0)	150 (50.0)	300 (100.0)
χ^2	4.065		P > 0.05

(Figures in parentheses denotes the percentage of respective values)

Use of sesame seed in Hindu religion is more like *Shraddha*, *Pooja*, *Shani Pooja*, *Makar Sankranti* etc. In the *Shraddha* meal fed to Brahmins who attended the ceremony. In as much as everything in this universe is a play and pattern of vibration, the combination of black sesame and water is believed to stir up vibrations that attract the deceased ancestors to visit and partake the offerings in the ceremony in their subtle bodies. The Desire sheath present around the subtle bodies gets activated due to the frequencies emitted from the black sesame seeds and the *Pitars* get satiated by partaking

their portion of *Shraddha* in air form. In *Shraddha*, water containing black sesame seeds charged with mantras (Tilodaka) has special spiritual importance. In South India, oil bath with the sesame oil is considered auspicious. On *Deepavali* (*Diwali*) day the Hindus take oil bath so that Lakshmi, Goddess of Wealth, resides in them permanently. They cook all the dishes only with this oil for religious festivals. *Makara Sankranti* (Pongal Festival in Tamil) is one of the Hindu festivals associated with the solar calendar. It is celebrated throughout India. It is called *Tila Sankranti* as well in Maharashtra because *Tila Balls* (*Tila Laddoos*) are distributed on that day. *Garuda Purana* and *Bhavishya Purana* give some information about sesame. It is considered very pure because it came out as sweat from the body of Lord Vishnu. Hindus use ‘sweat’ ‘dirt’, ‘soil’ so that a layman will understand. What they mean is it is part of God’s body. The use of sesame drives away the evil spirits and demons. Tamils also used white mustard seeds for the same purpose according to Sangam Tamil literature

Table 4 Knowledge of respondents regarding nutrients about sesame seeds

Nutrients	Male			Female		
	Yes	Mean score	Rank	Yes	Mean score	Rank
Energy	68 (22.7)	1.45	III	42 (14.0)	1.28	III
Fat	112 (37.3)	1.75	I	85 (28.3)	1.57	I
Protein	75 (25.0)	1.50	II	50 (16.7)	1.33	II
Carbohydrates	40 (13.3)	1.27	VI	32 (10.7)	1.21	IV
Calcium	48 (16.0)	1.32	V	30 (10.0)	1.20	V
Magnesium	30 (10.0)	1.20	VIII	15 (5.0)	1.10	VII
Potassium	15 (5.0)	1.10	X	8 (2.7)	1.05	VIII
Iron	62 (20.7)	1.41	IV	30 (10.0)	1.20	V
Sodium	12 (4.0)	1.08	XI	8 (2.7)	1.05	VIII
Vitamin A	18 (6.0)	1.12	IX	7 (2.3)	1.05	VIII
Vitamin B ₁	10 (3.3)	1.07	XII	6 (2.0)	1.04	IX
Vitamin B ₂	12 (4.0)	1.08	XI	8 (2.7)	1.05	VIII
Niacin	8 (2.7)	1.05	XIII	5 (1.7)	1.03	X
Vitamin C	32 (10.7)	1.21	VII	20 (6.7)	1.13	VI

(Figures in parentheses denotes the percentage of respective values)

Generally, people were about aware of sesame seeds but they were no knowledge of black and white sesame seeds health benefits and nutritive value. They were not an idea about how much nutrient is available in the sesame seed which was benefitted to make their health. Sesame is one of the oldest known sources of oil in the world. It has been cultivated about 3000 years ago in the tropics and desert regions in Middle Eastern Asia and adjoining Europe. There are many relative species to sesame but the cultivated crop of which we know as sesame is believed to have originated in India and spread to other parts of Asia. Sesame seeds are very small having ovate shape like an egg. The color of the seeds can range from gold, brown, red, gray and black. The reason being sesame was and is *still* popular for is its oil content. It has the highest oil content of any known seed. The name sesame comes from the Greek word *sesamon* which is ultimately derived from the Arabic word *simsim*.

Table 3 Knowledge of respondents regarding health benefits of sesame seeds

Disease	Male			Female		
	Yes	Mean score	Rank	Yes	Mean score	Rank
Rheumatoid arthritis	42 (14.0)	1.28	III	64 (21.3)	1.43	IV
Respiratory benefits	33 (11.0)	1.22	V	40 (13.3)	1.27	V
Asthma	14 (4.7)	1.09	IX	25 (8.3)	1.17	VII
Blood pressure	56 (18.7)	1.37	II	72 (24.0)	1.48	II
Heart problems	70 (23.3)	1.47	I	82 (27.3)	1.55	I
Diabetes	18 (6.0)	1.12	VIII	23 (7.7)	1.15	VIII
Migraines	34 (11.3)	1.23	IV	40 (13.3)	1.27	V
Menopause	26 (8.7)	1.17	VI	68 (22.7)	1.45	III
Cancer	8 (2.7)	1.05	X	11 (3.7)	1.07	X
Headache	14 (4.7)	1.09	IX	19 (6.3)	1.13	IX
Osteoporosis	22 (7.3)	1.15	VII	29 (9.7)	1.19	VI

(Figures in parentheses denotes the percentage of respective values)

Sesame seeds are extremely beneficial for health, but are often overlooked, and they include the ability to prevent diabetes, lower blood pressure, prevent a wide variety of cancers, build strong bones, protect against radiation, increase heart health, help cure sleep disorders, improve digestion, reduce inflammation, boost respiratory health, strengthen our oral health, aid in healthy growth, improve circulation, detoxify the body, and eliminate depression and chronic stress.

CONCLUSION

Sesame seed has been a source of food and oil. Sesame seed oil is *still* the main source of fat used in cooking in the near and far east. Sesame oil has many medical values as it is good for respiratory disorders, eye-infectious and digestive ailments. Sesame seeds production is much delegated so farmers have done lack of cropping of this because production cost was more and return price is low and not in India but also China, South Africa and other countries its cost is very high so people avoided the purchasing of the sesame seed. There were various health hazardous in consumption of sesame seeds.

Recommendations

1. Development of modules for diseases and insect pests of sesame seeds.

How to cite this article:

Jaya Singh., Neelma Kunwar and Smita Tripathi.2016, Benefits and Nutritive Value of Sesame Seed. *Int J Recent Sci Res.* 7(9), pp. 13245-13247.

2. Sesame is an excellent source of copper, providing 53 % of the recommended daily intake in 2 tablespoons in a dish called tehini (made from sesame seeds).
 - Copper is a powerful antioxidant that helps the immune system.
 - Copper as an anti-inflammatory and can reduce the swelling of rheumatoid arthritis.
 - Also, copper is used by enzymes that build connective tissue, metabolizing iron and synthesizing neurotransmitters.
3. Black sesame seeds may be small but they are packed with nutrients. They are rich in the vitamins B and E and thiamine. They contain minerals like copper, manganese, selenium, molybdenum, zinc, iron, phosphorus, calcium, and magnesium, as well as tryptophan, an amino acid. They contain the lignans sesamol and sesamin which are effective antioxidants. They are rich in fibre and photochemical (phylosterol). It is not surprising to find that an increasing number of people use the seeds to promote health.

References

1. Dr. Axe (2016). Sesame seeds benefit the heart and lower cholesterol. <http://draxe.com/sesame-seeds/>
2. Hassan, Manal A.M. (2013). Studies on Egyptian Sesame Seeds (*Sesamum indicum* L.) and its products.3.Effect of Roasting Process on Gross Chemical Composition, Functional Properties, Antioxidative Components and Some Minerals of Defatted Sesame Seeds Meal (*Sesamum indicum* L.) *World Journal of Dairy & Food Sciences* 8 (1): 51-57. ISSN 1817-308X /idosi.wjdfs.2013.8.1.1117
3. Jacob Schor, ND, FABNO. (2010). Sesame Seeds: our new 'flax seed'(articles) www.DenverNaturopathic.com