**Review Article** **ISSN: 2321 – 0915**

**Asian Journal of Phytomedicine and Clinical Research**

**Journal home page: www.ajpcrjournal.com**

# OATS – A REVIEW

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Oats is commonly known as AVENA SATIVA.L, received attention for high content of dietaryfibres, phytochemicals & nutritional value. It is good source of carbohydrate & quality proteins with good amino acids. Oats have been used as, bran, or flakes, oatmeal used to produce porridge, bread & breakfast cereals. Most of oat ingredient is bran or β-glucan enriched oat fractions. A strict gluten- free diet is only treatment for celiac disease& requires removal of wheat, rye, barley products. Celiac disease is condition in which grain protein causes autoimmune response that damage lining of intestine, villi & malabsorption of nutrient. Oat bran lowers serum lipid concentration**.** The common source of cereals found in moist climate. Now days most famous oats what we used is quaker oats. It requires more moisture & rich in source as animal feed. Comsumption of oatmeal, bran, & flakes are used for both clinical & industrial usages. Oats are used in the treatment for celiac disease. It requires lesser nutrients (sodium, potassium, phosphorus) than other cereals.

**KEYWORDS**
Celiac disease, β-glucan free diet and Avena Sativa. L.

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## INTRODUCTION

Oats is the most common cereals found for nutritional purposes. Wheat, maize, &rice play a major role among several grains. Oats is an important cereal crop can be used as oatmeal, bran, flakes in breakfast cereals[1]. Oats is common cultivated species of AVENA SATIVA.L. It appears as white covered coat. It requires more moisture than other cereal & it grows in cool & moist climate. It is most commonly found in American & European countries namely Russia, Canada & United states of America. It is frequently used as animal feed as well as human nutritions[2]. Naked oats are produced in china.

Some of the important oats varieties produced in china are shaxi, hebei, gansu, jinlin, etc.[3]. Oats are an invasive weeds &hard to harvest with other cereals. It belongs to avena type which belongs to family POACEAE [4]. The level of protein is relatively high at initial stages & at flowering stages there is decrease in protein concentration & it is tend to be constant. The field is uniform & it is capable for production of oats [5].

**NUTRIENTS OF OATS**

Steel cuts oats is commonly called as Iritish or Scottish oats. It can be used in combination with cookies, biscuits, breads. This oats also contains sources of vitamin B & iron. Also act like good energy sorce in the morning[6]. Oats contain a well mineralized nutritional composition namely,

**Starch**

Oats starch contains 60% of proteins of oats. Oatmeal contains 27.14 grams of starch. It is a type of carbohydrate hence it is made up of number of sugar molecules held together[7]. The average oat starch granule measures about 3 to 10 micro meters. Oat amylose is present in protein & fat which is amorphous in nature & easily absorbed [8].

**Fiber**

Oatmeal is very good source of fiber & it is good for heart to function properly. It lowers low- density lipoproteins, control of cholesterol levels, & suffering from heart disease [9]. Oats also contain β-glucan which lowers cholesterol level & maintains immunity. It also contain soluble & insoluble fiber [10]

**Protein**

Oats have protein content of 11 to 15% & have low source of protein. Based on the solubility, proteins can be classified into albumin, globulin, prolamins & glutelins. Oats have relatively high protein content than other cereals. The main protein found in proteins is globulin which is found in endosperm of oats [11]

**Cooking & Consuming**

1. Cooking by Flaking Process

It is the process which involves stages like cleaning, heat treatment, dehulling, cutting & flaking. Oats are mostly flaked ones. During this processes, oats are more sticky in nature because it shows high level of lipid content with it & it is difficult toseparate it. Flaked oats is popularly known as quaker oats .5-10% of oats have not required any temperature because β-glucan is not present in much quantities & single step can be taken [12] Oats flakes is a kind of oats which is treated specially. It is very important for human diet & can be taken as best nutrition for human diet.

2. By Pearling Process

It is the process in which oats are polished to remove all unwanted wastes. Many process are carried out which are dry processing, pearling, milling & sitting. Production of bran in bran layers have been set up. [13] It can be done for removal of trichomes & prevent microbial attacks from oats. Pearling process can be done easier because of their softness & higher lipid content which decreases kernel breakage.

3. By Heating process

This process can be carried out by kiln cleaning & steam stabilization. Steam can be stabilized by microwave heating. Prevention of lipid hydrolysis is the main aim for manufacture of oat diet. Microwave heating is done above 150˚c for 15 minutes have been increased. Heating process used to deactivate lipase & lipoxygenase in cereal, soybean, cereals etc. Groats is steamed for about 80-110˚c in 30-90 minutes. Mechanical heating is used to identify the characteristics of mechanical properties of oats [14].

**Consuming Products of Oats**

1. Oatmeal

It is also known as white oats, which is made from porridge. It can be used in several forms like steel-cut oats, crush oats, grounded oats, & rolled oats I Figure No. [14].

2. Oat Beverages

It can be available in the form of oat soya bean milk, oats drinks, oat alcohol, oats beer, oats wine etc Figure No. 2.

3. Oats Hay

It is used as animal feed & several stages are involved in this. Hay can be most widely used in eastern countries. Hay can be cut in different developmental stages. Hay cutting & storing is used in this process Figure No. 3 [15]

4. Oats Cosmetics

B-Glucan, oat lipid, oat protein, oat peptide can be extracted for preparation of moisture preserving hair conditioner, moisturing skin cream, moisture body conditioner. Figure No. 4

5. Oats Flour

It is rich diet & preferred to be healthy diet also. Delicious oat flour is considered to be most enriched & protects heart from certain diseases like heart attack, etc. From this flour, oats noodles can also be prepared Figure No. 5.

**Figure No. 1: Oatmeal**


**Figure No. 2: Oat Beverages**

**Figure No. 3: Oats Hay**

## ADVANTAGES OF OATS

Oats can be provided in the form of variety of food items. There are many advantages regarding oats than disadvantages. Oats is an excellent source of fibres in our daily based diet. Oats based diet is usually given to infants for their nutritional requirement & adequate growth. B-glucan is used to maintain icecream level. Oats antioxidant is used to maintain milk & meat products. It is also used to make heat resistance chocolates due to their viscosity &self emulsifying properties[2] Oats may decrease risk of asthma in growing children. It may supply energy to nutrition given to gluten free diets. It lowers serum lipid concentration. It increases appetite control hormones & one beta glucan maintains immune system. Oats lowers cholesterol level, decreases the risk of diabetes, improve insulin sensitivity, & controls blood pressure [16].

Oats provides high fiber level because it is commonly called as fiber rich diet, low fat content & higher protein level. It reduces hunger sensation & serves as good diet [17].


**Figure No. 4: Oats Cosmetics**

**Figure No. 5: Oats Flour**

## CONCLUSIONS

Oats plays a major role in nutritient & medicinal part. Intake of oats keeps a person healthy. It can cure several health related problems.

## ACKNOWLEDGEMENT

The author was sincerely thanks to the Saveetha Dental College and Hospitals, 162, Ponnamalle High Road, Vellapanchavadi, Chennai-77, India for providing the facilities to complete this review work.

## REFERENCES

1. Lochtinen P. Traditional & modern oat – based foods, kaukovirta – norja &, *Finland***.**
2. Prasad Rosane, AlokJha, LathaSabikhi, Arvind Kumar. Nutritional advantages of oats & oppurtunities for processing as value added foods, 1, 2013, 25**.**
3. Zhao Gui-qui, Hu Xinzhong, Ru Ming-hvang , Guo Lai-chun , Wang Chun-long Research & industrial progress of oats, *china*, 1, 2012, 06-20**.**
4. http;//www.wikipedia.com**.**
5. Meyer JH, Weir WC, Jones LG &Hull JL. California Agriculture, Feeding value of oat hay, 1958**.**
6. Becky Henne. Steel cuts oats are whole grains food that provides good source of fiber & protein, 27, 2012**.**
7. Healthy Eating Mener, Is oatmeal a starch or fiber.
8. Starch content of oats vs wheat by Sara Kirchheimer, 6, 2010.
9. Is oatmeal a good fiber food , Melodie Anne Coffman
10. http;// www.health.com
11. http;// www.oatsandhealth.org
12. http;//www.love2brew.com
13. Effect of pearling on dry processing of oats.
14. Role of heat treatment in processing & quality of oats, Gates & Fred
15. http;//www.agric.wa.gov.au
16. http;//www.wholegrainsconcil org
17. Diana Herrington. 10 benefits of oatmeal, 15, 2011, 18.