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POMEGRANATE: EFFECTIVE IN WEIGHT LOSS, ANTIOXIDANT, ANTI-INFLAMMATORY, ANTI-CANCER AND ANTI-MICROBIAL PROPERTIES

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ABSTRACT

Pomegranate is worthy and salutary source of biologically active compound with healthful Properties. It reduces body consumption and body weight. Pomegranate is rich in anticancer, Antioxidants, anti-inflammatory and antimicrobial properties. It is also effective in digestive health and cardiac health. Pomegranate is rich in fibers, proteins, vitamins and minerals. It also maintain Hormonal imbalance it is used in the treatment of hair loss and also beneficial in the treatment of Menopause.

KEYWORDS

Pomegranate, Weight loss and Anti-inflammatory.

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INTRODUCTION

Have you ever made an efforts to lose weight? There are many ways to lose weight and everyone trying in their. Ways to look glamorous. Exercising dieting and other difficult processes that take consistency and motivation.

Here is interesting thing that pomegranate juice is definitely one of your favorite. The vibrant color and juicy arils make them such a treat. Pomegranate juice is not only tasty, but it's also filled with antioxidants and polyphenols that can be advantageous for your overall health. These compounds have been linked to supporting heart health, reducing inflammation, and possibly enhancing cognitive function. It's wonderful that you recognize the positive impact of pomegranate juice. Have you tried any exciting recipes or dishes with pomegranates? Here is smooth solution to lose

weight is drinking pomegranate juice it reduces consumption and body weight. Pomegranate juice can be a refreshing and healthy choice when you're looking to lose weight. It's low in calories, high in fiber and packed with antioxidants, which can help boost your metabolism. Make certain to enjoy it in moderation as part of a balanced diet. Cheers to your health and weight loss journey.

Pomegranate also known as *Punica granatum* L. Belongs to family Lythraceae plant grown on shrubs like trees contain orange flowers and pomegranate fruit is available around the year but freshly harvested in September and January. It is commonly cultivated in Americas from the warmer parts of the US to Chile. For centuries, pomegranate has been valued for its healing properties. It contains biologically active compounds like ellagitannins, anthocyanins and flavonoids which contribute to its health benefits. It's fascinating how nature provides us with such nourishing treasures which contribute to its potential health advantages. It's remarkable how nature offers us such beneficial plants. Pomegranate juice is abundant in antioxidants and polyphenols, which hold anti-inflammatory, anti-cancer and antimicrobial properties. Scientific studies have demonstrated the potential of pomegranate in modulating various biological processes and promoting overall well-being. The ongoing research on pomegranate continues to unveil its therapeutic potential and shed light on its effects on different health conditions. It's fascinating to witness the scientific exploration of this remarkable fruit. Studies also demonstrated that pomegranate might have a potential role in managing conditions like urinary tract infections, weight loss and cognitive health. It's truly a remarkable fruit with so many potential benefits.

CHEMICAL COMPOSITION

Juice and peel

Pomegranate juice presents a notable composition of fructose, sucrose, and glucose, along with diverse organic acids such as ascorbic, citric, fumaric and malic acid. Additionally, it contains lesser

concentrations of various amino acids, including proline and methionine. The intricate blend of these components contributes to the nutritional profile of pomegranate juice. It's fascinating to explore the intricate composition of this remarkable fruit juice and valine. The compounds in pomegranate indeed have antioxidant, anti-inflammatory, anticancer, and antimicrobial properties. Scientific investigations have demonstrated the potential efficacy of pomegranate in the management of urinary tract infections, weight loss, cognitive function, and cancer. These studies shed light on the diverse therapeutic benefits that pomegranate may offer. It's fascinating to witness how pomegranate continues to be a subject of ongoing scientific research, unraveling its potential in various health conditions. It's impressive how versatile and beneficial pomegranate can be! These compounds contribute to its unique antioxidant and preservative properties, highlighting its potential medicinal value¹.

Seeds

Pomegranate seeds that have been cleaned and dried have an oil content of 18%. The oil primarily consists of punical acid, a triple-conjugated 18-carbon fatty acid, which makes up 65% of the oil's composition. Additionally, pomegranate seeds contain phytoestrogens that have similar sexual steroid hormones to those found in humans. One of these compounds, 17-alpha estradiol, acts as a counterpart to estrogen¹.

PHARMACOLOGICAL USES

Weight loss

The overall polyphenols content of pomegranate molasses (PM) was measured and compared to fresh pomegranate juice. The results showed that PM contained 252.28 mg of Gallic Acid equivalent per liter, whereas the juice had 79.49mg/L. The antioxidant effect of both PM and juice was then evaluated using electrolysis as a system to generate free radicals *in vitro*. The findings revealed that PM exhibited robust antioxidant properties, which were approximately four times more potent than the juice. Furthermore, when molasses or juice were

administered to mice in their drinking water for 11 weeks, a significant reduction in the weight curve was observed compared to the control group. Pomegranate supplementation resulted in reduced levels of triglycerides and lipid peroxidation in the heart, lungs, and liver, accompanied by an increase in superoxide dismutase activity. These findings suggest the potential antioxidant and cardioprotective effects of pomegranate. In conclusion, pomegranate molasses demonstrates potent antioxidant activity and potential for weight loss in mice. 120ml of pomegranate juice daily for one month significantly decreases fat in an adult. Dietary fiber and other nutrients present in the pomegranate which can still help in weight loss. Pomegranate juice gives feeling of fullness because it contains high sugar. These compounds are found throughout the entire pomegranate and contribute to its nutritional value and potential health benefits.

Antioxidant effect

It gives antioxidants property. Polyphenols have the ability to work as antioxidants by directly scavenging free radicals and binding to metals. Additionally, they can indirectly activate the expression of enzymes that have antioxidant properties. It's amazing how they can protect our cells from the harmful effects of oxidative stress! It contains polyphenolic compound shows therapeutic effect against oxidative stress damage caused by free radicals. Antioxidants protect cells from free radicals. Pomegranate also shows anti-inflammatory properties. Pomegranate is well-known for being a rich source of anthocyanin, flavones, proanthocyanidins, punicalagins, ellagic acid derivatives, and organic acids in every part of the fruit.

Anti-inflammatory effects

The anti-inflammatory properties of pomegranate (PG) and its major xygenase enzymes. Additionally, the acetone extract of whole PG fruit has been found to inhibit the Phosphorylation of cytokines released by UV-B-irradiated keratinocytes, and this effect is NF- κ B-dependent 13. Anti-inflammatory properties of PG and its major com-Interestingly, the beneficial effects of

PG against gastrointestinal inflammation have not been reviewed yet. The outline of this paper is to condense the evidence for or against the efficacy of PG in addressing inflammatory conditions of the gastrointestinal tract. The paper will be divided into three parts, focusing on the modifications of PG active compounds in the gastrointestinal tract, the anti-inflammatory effect of PG and individual compounds at the gastric level, and the anti-inflammatory effect in the gut, considering the main metabolites formed after PG consumption through microbial biotransformation².

Anti-cancer efforts

It also have anti-cancer properties. Pomegranate exhibits anti-cancer activity through the action of bioactive compounds. These compounds have demonstrated the ability to inhibit cancer cell growth, induce apoptosis (cell death), and reduce inflammation, thereby offering potential protective effects against various types of cancer. Nonetheless, further scientific investigation is required to comprehensively elucidate the underlying molecular mechanisms of pomegranate's anti-cancer properties. Cancer is unrestricted proliferation cell pomegranate induced cell growth. Almost 47% of the anti-cancer drugs are derived from natural products. Pomegranate extract may be beneficial for prostate cancer, skin cancer, lungs cancer and breast cancer. Pomegranate studies have indeed focused on exploring the effects of its compounds on different types of cancer cells. Breast cancer has been a particular area of interest in these studies, with researchers investigating how pomegranate extracts may affect various breast cancer cell lines. The findings have shown promising potential, but more research is needed to fully understand the benefits. MDA-MB-231, MCF-7, HepG-2, and PC-3 have been used for investigation. The goal of these studies is to gain deeper insights into the potential effects of PPE on breast cancer treatment². In terms of colorectal cancer, investigations have been From these studies, researchers are examining the possible impacts of pomegranate on triglycerides, lipid peroxidation, and superoxide dismutase activity in the heart, lungs, and liver. The

result imply that pomegranate may have therapeutic benefits and contribute to overall health. It's exciting to see ongoing research exploring the potential of this remarkable fruit colorectal cancer research³.

Antimicrobial effects

Antimicrobial compounds derived from various plant sources, including pomegranate (*P. granatum*), have proven to be successful alternatives to synthetic chemicals in inhibiting the growth of food borne bacteria. These natural antimicrobials offer a promising solution for suppressing bacterial growth in the food industry³. Several previous studies have reported the antimicrobial activity of *P. granatum* peel extracts against various food borne pathogens. These studies provide evidence that the polyphenolic bioactive compounds found in *P. granatum* peel extract are conducted to elucidate the potential impacts of pomegranate in the context of various health conditions, including cancer prevention, anti-inflammatory properties, and cognitive enhancement.

Researchers are investigating the mechanisms by which pomegranate compounds may modulate these pathways, aiming to provide valuable insights into its therapeutic prospects. The ongoing investigations in this field are highly intriguing^{4,5,6}.

Other uses

Pomegranate effective in cardiac health it decreases plaque build-up also decrease chest pain and can prevent low-density protein i.e bad cholesterol. The antimicrobial properties of pomegranate help in the fight of potentially toxic bacteria, fungi and yeast that can contribute tooth decay. It also helps in the muscle recovery. Pomegranate also help in the digestive health it increases the level of beneficial gut bacteria and shows prebiotic effect. Pomegranate is rich in phytochemicals and also help in the glowing skin because it reduces the wrinkles and also promote skin cell generation. Pomegranate also help in the treatment of menopause and double blind placebo. It is beneficial in the loose motion and effective in the hair loss.

Table No.1: Pomegranate's nutrient values for 100g of raw edible portion

S.No	Nutrients	Value per 100 grams
1	Water	77.93g
2	Energy	83 Kcal
3	Protein	1.67g
4	Fat	1.17g
5	Ash	0.53g
6	Carbohydrates	18.70g
7	Fiber	4.0g
8	Sugar	13.67g
9	Calcium	10Mg
10	Iron	0.3Mg
11	Magnesium	12Mg
12	Phosphorus	36Mg
13	Potassium	236Mg
14	Sodium	3Mg
15	Ascorbic acid	10.2Mg
16	Choline	7.6Mg



CONCLUSION

On the basis of available data it seems that pomegranate reveals complimentary upshot regarding weight loss and other pharmacological properties, regardless more advanced analysis are essential to exhaustively apprehended it's implement, ability and requisition.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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