

A Review on Benefits of Cow Urine (Gomutra)

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Abstract :

Cow urine, known as "gomutra" in traditional Indian medicine (Ayurveda), has garnered attention for its diverse health benefits. This unique substance boasts a complex composition, containing elements like urea, uric acid, creatinine, and several minerals. Its therapeutic potential is multifaceted. Firstly, cow urine serves as a potent antifungal agent. Its components, particularly urea, exhibit inhibitory effects against fungal growth, making it valuable in addressing fungal infections.

Furthermore, cow urine acts as a bioenhancer, enhancing the bioavailability and effectiveness of various drugs and herbal remedies. This attribute makes it a valuable component in Ayurvedic formulations. Additionally, it acts as an immunostimulant, bolstering the body's immune system. This quality can aid in preventing and combating various infections and diseases. Cow urine also shows promise as an antioxidant, helping to neutralize harmful free radicals in the body, potentially reducing the risk of oxidative stress-related ailments. Lastly, preliminary research suggests that cow urine may possess anticancer properties, with certain compounds demonstrating potential in inhibiting cancer cell growth. In conclusion, cow urine's rich composition offers a range of health benefits, including antifungal, bioenhancing, immunostimulant, antioxidant, and potential anticancer properties. While further research is needed to fully explore its therapeutic potential, it remains a subject of interest in the field of alternative medicine.

Keywords : Gomutra, Panchagavya, Ayurveda, Bioenhancer, anticancer, antifungal, immuno-stimulant, antioxidant.

Introduction : Cow urine, often referred to as "gomutra" in the ancient Indian system of medicine, Ayurveda, has long been a subject of intrigue and study due to its rich composition and potential health benefits. In the realm of traditional medicine, cow urine is considered a treasure trove of therapeutic properties, encompassing a wide array of advantages that range from antifungal and immunostimulant effects to its role as a bioenhancer, antioxidant, and even a potential anticancer agent [1]. One of the primary aspects that captivates researchers and practitioners alike is the intricate composition of cow urine. This biological fluid contains a diverse blend of constituents, including urea, uric acid, creatinine, and various essential minerals. It is this intricate mix that sets the stage for its multifaceted health benefits [2]. First and foremost, cow urine's antifungal properties are of significant interest. The presence of certain compounds, such as urea, has demonstrated inhibitory effects against fungal growth. This suggests a potential role in addressing fungal infections, which continue to be a global health concern. Additionally, cow urine's reputation as a bioenhancer is well-founded. Its ability to enhance the bioavailability and effectiveness of drugs and herbal remedies is valued in the field of Ayurvedic medicine. This quality can lead to more efficient therapeutic interventions, providing an attractive avenue for further exploration [3]. Moreover, cow urine serves as an immuno stimulant, capable of fortifying the body's

immune system. This immunomodulatory effect holds promise for bolstering the body's defenses against various infections and diseases. Furthermore, the antioxidant properties of cow urine cannot be understated. By combating harmful free radicals, it may contribute to the reduction of oxidative stress-related ailments, potentially promoting overall health. Lastly, emerging research suggests that cow urine may harbor anticancer properties. Certain compounds within it have exhibited potential in inhibiting the growth of cancer cells, opening new avenues for cancer research and treatment. In this comprehensive review, we delve deeper into the detailed composition of cow urine and explore its multifaceted benefits as an antifungal agent, bioenhancer, immunostimulant, antioxidant, and potential anticancer therapeutic agent. While acknowledging its historical significance in traditional medicine, we also consider the evolving scientific perspective on this intriguing natural substance.[4]

Cow urine : Cow urine is valued for its therapeutic properties and is integrated into various drug formulations. It serves as a natural disinfectant and purifier, with a shelf life of approximately 5 years, making it a highly effective antiseptic compared to synthetic alternatives. This highlights that cow urine, primarily composed of water (95%), urea (2.5%), and a blend of minerals, salts, hormones, and enzymes (2.5%), is not a toxic waste. In rural Indian communities, it has been employed for wounds, skin conditions, and bathing, underscoring its traditional medicinal significance. Ancient Indian scriptures and modern research support its rational use in addressing respiratory, gastrointestinal, cardiovascular issues, and even cancer. Traditional practices incorporate cow urine as medicine, either independently or in synergy with specific drugs, offering a diverse range of therapeutic applications.[5]

Cow urine, a key component of Panchagavya, plays a vital role in enhancing immune responses. It has a wide range of beneficial effects across various scientific fields. In the realm of oil and petroleum transmission, the formation of microbial biofilms causing pipeline corrosion has been a significant issue. Cow urine, possessing antimicrobial properties, has been employed to mitigate these microbes, thereby reducing pipeline corrosion. Furthermore, cow urine has the remarkable ability to rectify various bodily imbalances and adverse effects. It aids immune enhancement through the stimulation of cytokines, increasing the secretion of interleukin-1 and 2, as well as amino acids. Studies have shown its capacity to boost both T and B cell proliferation, elevating levels of IgG, IgA, and IgM antibodies in mice. This augmentation of immune competence contributes to overall better health and is revered as a potent secretion of animal origin, often referred to as "Amrita" or the elixir of immortality. Cow urine activates macrophages, bolstering both cellular and humoral immune responses. It expedites wound healing in cases of external injuries, as demonstrated in excision wound models in Wistar albino rats. Its antimicrobial effects extend to drug-resistant bacteria and viruses. Notably, cow urine has shown promise in the treatment of challenging diseases such as cancer, AIDS, diabetes, and skin conditions. Additionally, it serves as a potent appetite stimulant. The distilled form, known as Ark, serves as a robust bioenhancer for commonly used antibiotics, antifungal, and anti-cancer drugs. When used in conjunction with antibiotics, it aids in controlling bacterial infections and enhances drug efficacy in tuberculosis patients and cancer treatments. These medicinal properties have been recognized and granted U.S. patents by the Council of Scientific and Industrial Research (CSIR), India.[6]

Composition of cow urine urine:

Cow urine is a complex mixture composed of various organic and inorganic compounds. It contains water as the primary component, making up about 95% of its composition. The remaining 5% comprises a diverse array of substances, including minerals, enzymes, hormones, and other organic compounds.

Minerals such as nitrogen, phosphorus, potassium, calcium, and magnesium are present in varying concentrations. These play crucial roles in plant growth and development. Additionally, trace elements like iron, copper, zinc, and manganese are found in smaller quantities but are still essential for plants.[7]

Water-95%

Urea-2.5%

Enzymes – 2.5%

Name Of Elements	Elements Level (ppb)
Sodium (Na)	7605.901
Calcium (ca)	1311.903
Chromium (Cr)	0.187
Iron (Fe)	19.555
Magnesium (Mg)	24836.975
Aluminium (Al)	7.555
Potassium (K)	3230193.196
Zinc (Zn)	81.308
Gold (Au)	85.34

Cow urine also contains organic compounds like urea, creatinine, and uric acid, which are metabolic waste products excreted by the cow. These compounds contribute to the nitrogen content of the urine and can act as a natural source of fertilizer. Furthermore, enzymes and hormones present in cow urine may have potential agricultural benefits. Enzymes can facilitate biochemical reactions in plants, while hormones might influence growth patterns. It's worth noting that while cow urine has been used in traditional agricultural practices in some cultures, scientific research on its efficacy and benefits is ongoing. It's recommended to consult agricultural experts or researchers for specific guidance on its application in modern farming practices[8]

Benefits of cow urine : Cow urine's multifaceted benefits, shedding light on its profound impact in addressing fungal infections, enhancing the efficacy of various remedies, fortifying the immune system, offering therapeutic solutions, combating oxidative stress, and hinting at its role in the fight against cancer.

Antifungal :

Numerous studies have demonstrated that cow's urine exhibits potent antimicrobial properties, on par with established drugs like ofloxacin, cefpodoxime, and gentamicin. It notably proves more effective against Gram-positive bacteria than Gram-negative ones.

Interestingly, it shows activity against drug-resistant strains, including multidrug-resistant *Escherichia coli* and *Klebsiella pneumoniae*. [9] This antimicrobial action is further bolstered by its role as an immune-enhancer and bioenhancer for certain antibiotics. Additionally, cow urine displays antifungal properties comparable to amphotericin B, along with anthelmintic and antineoplastic effects. It also possesses antioxidant attributes, guarding against DNA damage from environmental stress. In managing infectious diseases, cow urine can be used either independently or in conjunction with standard antibiotics to prevent resistance development and amplify their effectiveness. [10]

Bioenhancer:

Cow urine, referred to as a 'bioenhancer' or 'biopotentiator,' augments the effectiveness of active substances when combined, without exerting independent activity. Ayurveda employs the 'yogvahi' principle to describe this property, enhancing oral bioavailability while reducing dosage and side effects. Integrating Ayurvedic knowledge with modern research methods can lead to more effective drug formulations. Cow urine, acting as a bioenhancer, proves beneficial in antifungal, antimicrobial, and anticancer agents. [11]

Cow urine distillate (CUD) surpasses cow urine (CU) in bioenhancing capability. It amplifies antibiotic transport, like tetracycline, rifampicin, and ampicillin, across the intestinal wall by 2-7 times. Additionally, it heightens taxol's potency against MCF-7 cell lines. CU increases rifampicin's bioavailability by 80-fold and clotrimazole by 5-fold. Used in tandem, rifampicin's efficacy rises significantly against various bacteria. Moreover, paclitaxel exhibits heightened effectiveness against MCF-7, a breast cancer cell line. This enhancement is attributed to

CU's facilitation of drug absorption across cell membranes. Notably, U.S. Patents (6896907, 6410059) acknowledge CU's bioenhancing properties with antibiotics, antifungals, and anticancer agents. [12]

CU finds extensive application in diverse Ayurvedic formulations, including Panchagavya ghrita, Lashunadghrita, and Sidhartakghrita for psychiatric conditions and abdominal tumors. It's also a component in Mandurvatak, Darvighrita, and Punnarvamandur formulations. CU acts as an adjuvant with various formulations like Hareetakyadyog, Swarnkshiryadyog, and Gvakshyadichurana. These formulations are available in different forms, including ghee-based preparations and powders like bhasms, yogis, and churans. [13]

Immuno- stimulant :

Ayurveda emphasizes the use of natural elements like chavanprash and panchgavya, comprising herbs and minerals, to bolster the body's innate defense against infections and pathogens. Ancient Ayurvedic wisdom states that regular consumption of cow urine (CU) elevates disease resistance by an impressive 104%. Studies have corroborated this, revealing heightened humoral and cell-mediated immune responses in mice. [14] This underscores CU's potential as a powerful tool in fortifying the body's immune system, aligning with Ayurvedic principles of holistic wellness and disease prevention. This traditional knowledge, when integrated with modern research, opens avenues for developing innovative approaches to health and well-being. [15]

As therapeutic agent :

Cow urine is hailed for its remarkable antimicrobial and germicidal properties, functioning as a potent antibiotic and germicide. Regular consumption is believed to enhance immunity, offering therapeutic benefits across a spectrum of ailments. These include respiratory, gastrointestinal, cardiovascular, and musculoskeletal disorders, among others. Its composition, rich in urea, creatinine, swarn kshar, carbolic acid, phenols, calcium, and manganese, explains its powerful antimicrobial effects. Uric acid contributes to its anticancer potential,

while allantoin aids wound healing. The urinary components also influence various bodily functions, acting as diuretic agents, renal stimulants, and blood purifiers. Additionally, cow urine plays a role in detoxification, countering the effects of certain poisons. Beyond its curative properties, it maintains homeostasis, impacting cholesterol levels, memory, liver function, and aging. Recent research highlights its antioxidant activity, suggesting potential in combating oxidative stress-related degenerative conditions. Overall, cow urine therapy presents a holistic approach to health maintenance and disease prevention.[16]

Antioxidant :

Cow urine and its distillate have been subjected to rigorous testing, revealing notable antioxidant and antimicrobial properties. This finding holds significant promise for potential therapeutic applications in countering oxidative stress, a critical factor in both general health and specific diseases. The observed antioxidant capability is believed to stem from the urine's ability to scavenge free radicals, thereby mitigating the aging process. This discovery underscores the potential of cow urine as a natural defense against the detrimental effects of oxidative threats. The components within the urine exhibit free radical-scavenging properties, further highlighting its potential in anti-aging interventions. This research not only validates traditional practices but also opens doors for the development of novel interventions harnessing the inherent properties of cow urine for improved health outcomes.[17]

Anticancer :

Cow urine has demonstrated potential anti-cancer properties through research conducted by institutions like Go-Vigyan Anusandhan Kendra and the Central Institute of Medicinal and Aromatic Plants. These studies highlight its effectiveness in treating cancer and its ability to enhance the potency of anti-cancer drugs. This achievement was further validated by the granting of a U.S. Patent (No. 6896907) in 2005.[18] Research has also shown that cow urine safeguards DNA from damage caused by pesticides and prevents cell suicide (apoptosis) in lymphocytes. It protects against chromosomal aberrations and prevents the harmful effects of free radicals, which can lead to aging. Regular use of cow urine is suggested to have rejuvenating effects. Additionally, cow urine exhibits antimicrobial capabilities, potentially reducing cancer incidence by combating drug-resistant bacteria and viruses linked to cancer. It also acts as a bioenhancer, increasing the effectiveness of chemotherapy drugs and potentially reducing their dosage and treatment duration, thus lowering costs and minimizing side effects. In combination therapy, cow urine may be utilized efficiently for cancer treatment.[19]

Conclusion :- Cow urine, known as “Gomutra” in Ayurveda, offers wealth of potential health benefits due to its diverse composition. It demonstrates antifungal properties, acts as a bioenhancer, boosts as an antioxidant, and shows promise as an anticancer agent its rich blend of minerals, urea, uric acid, and other organic compounds underscores its therapeutic potential. While further research is needed to fully unlock its benefits, cow urine remains a subject of interest in traditional and alternative medicine. The multifaceted nature of its properties position cow urine as a valuable natural resource with potential application in addressing various health challenges.

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