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Corn Silk- A Medicinal Boon

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Abstract : Herbs are one of humanity's oldest known health care therapeutic essentials for a sustainable health, which forms the basic platform of modern medicines. Through out the world, there is now an inclination and search for stable diets with added value. One such important herb which is found extensively all over the world is corn silk. It is scientifically referred to as *Maydis stigma or Zea* as they reflect the soft, fiber-like growth that accompanies the ear of the corn.

Corn silk is an essential herb that is used traditionally to treat a wide range of diseases. Its potential use is very much related to its properties and mechanism of action of its plant's bioactive constituents such as flavonoids, terpenoids, etc. Pharmacological studies have proved that this traditional herb was found to have medicinal properties like anti-oxidant, anti-depressant, anti-hyperlidemic, anti-diabetic,anti-inflammatory,neuroprotective toxicity and many more properties.

Keywords : therapeutic; Corn silk; traditionally; Pharmacological studies.

Introduction

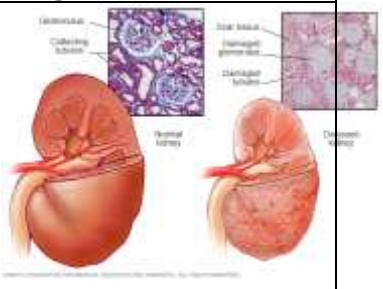
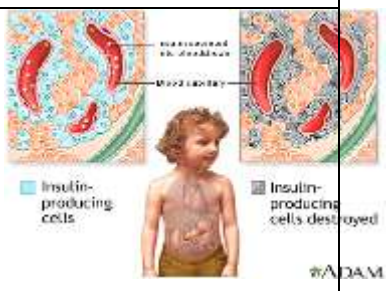
Corn silk is considered as a waste byproduct of maize(corn). Maize being the third most planted food crop and one of the major energy sources,it is also one of the essential cereal and edible grain the world possesses. Cornsilk,a part from having proteins, vitamins, carbohydrates, also is an excellent source of fixed and volatile oils, steroids like sitosterol, stigmasterol, alkaloids, saponins and other natural antioxidants like flavanoids. The flowers of corn are monoecious. The male flowers called as tassels which produce yellow pollen. The female flowers produce corn silk. The silks function as a stigma of a female flower and as the fruit develops, the silk elongates beyond the cob covering the edible part of the plant. Initially, the colour of corn silk is light green, which later turns to red, yellow or light brown. Each silk of corn may be pollinated to produce one kernel of corn.It also contains maizeric acid, resin, sugar, mucilage, fibres that are essential for diet[1].It also contains chemicals that work like water pills(diuretics),and it can also alter blood sugar levels and is also helpful in reducing inflammations.[2]

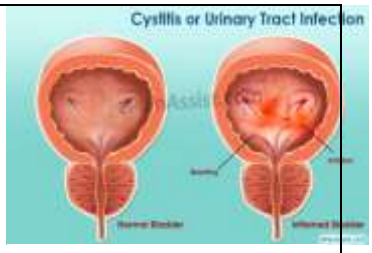
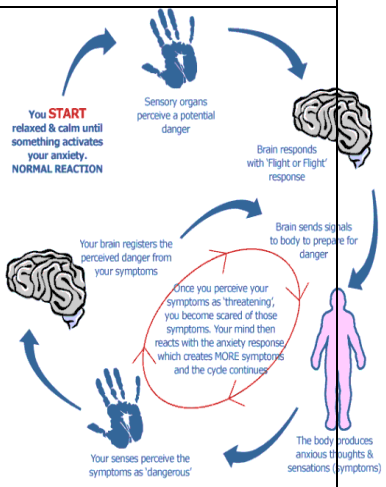
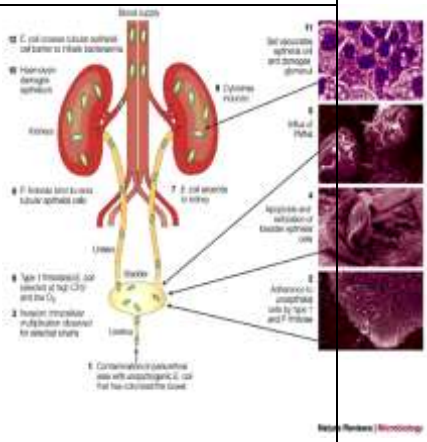
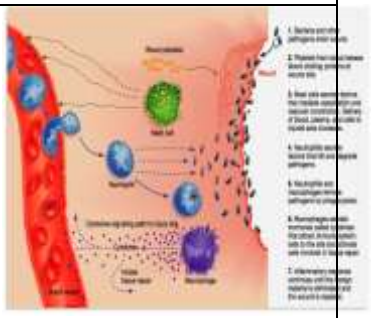
Fig No.1: Parts of Corn

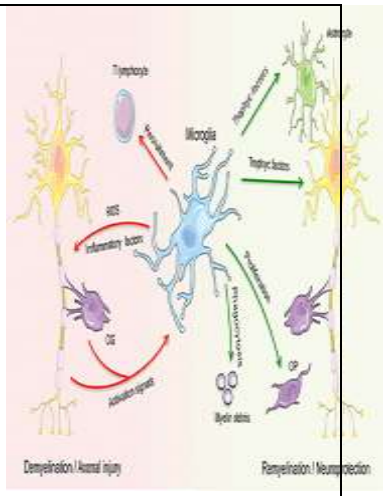
Water based infusions of cornsilk have been shown to have immune stimulating properties in animal studies with a stimulation of interferon production (a key substance in the body's response to infections) .There was also an observation made where there was increased production and movement of specialized white blood cells , called macrophages,that could engulf foreign particles. Laboratory studies have also shown that cornsilk is able to inhibit certain bacteria from sticking to the lining of cells and that it also reduces certain cancer forming compounds. Cornsilk is a completely safe herb to use in large or frequent doses when needed. Cornsilk extracts are a benefit to the young or old,and also to the pregnant and breastfeeding women. This natural herb can be used in many ways. It is usually handpicked from freshly plucked corn and is either processed to its liquid or powdered form for experimental uses. It is best used when fresh or freshly dried.

Cornsilk has been used as a remedy for urinary tract ailments, including bed-wetting, painful and frequent urination, stones, bloating, liver problems, gravel in the bladder and chronic cystitis, urethritis, and prostatitis, (and other prostate disorders). Cornsilk is used today as a diuretic and it has also been known to be effective for weight loss and obesity.Cornsilk has also been used for carpal tunnel syndrome, to improve symptoms of PMS,like that of tenderness of breasts,bloatingeffects;and also promotes relaxation.CS may also be beneficial in reducing BP, by reducing fluid retentionin the body and also by eliminating toxins which could relieve symptoms of gout,edema and arthritis.It also works as a gentle detoxifying remedy for the body system.Naturopaths have used cornsilk extracts in the treatment of gonorrhea and all fatal conditions of the urinary passage. Cornsilk is also said to be an excellent source of vitamin K which has been known to slow bleeding. It is found to condition skin and hair,and is often an important constituent of skin and hair products.

Different Medicinal Properties of Corn Silk

Disease	**Symptoms**	**Treatment Using Corn Silk**	**Image**
Chronic kidney disease	high blood pressure, anemia, weak bones, poor nutritional health also increases the risk of having heart and blood vessels diseases	Corn silk is usually prescribed in the form of corn silk tea[6]	
Diabetes	Systemic weight loss, smell of acetone in breath, nausea, vomiting, abdominal pain, polyuria, glycosuria, blurred vision, polydypsia and polyphagia.	The action of corn silk extract on glycaemic metabolism is through increasing insulin level as well as recovering the injured beta-cells [3].	

Urinary tract infection	Burning, itching and constant urge for urination	Administration of aqueous cornsilk extract as it has a variety of secondary metabolites such as tannins, terpenoids,alkaloids and flavonoids; these metabolites have been found invitro to have specific antimicrobial properties[4].	
Anxiety	uneasiness, compulsive behaviors,perfectionism,self doubt ,excessive worry, irrational fears, chronic indigestions, muscle tension, stage fright, problem in sleeping, cold or sweaty hands or feet, shortness of breath, heart palpitations, not being able to be calm, mouth becomes dry , numbness or tingling of hands or feet, nausea, muscle tension, dizziness.	The shade dried and powdered cornsilk and packed into Soxhlet apparatus and extraction was done by hot continuous percolation using rotary evaporator EYELA N-1100 and dried extract was preserved in vacuum dessicator with anhydrous silica gel blue[5].This was tested on animal models with petroleum ether, chloroform and ethyl acetate extract doses. With course of time, chloroform extract of cornsilk after acute dosing possessed anxiolytic activity, which the other two extracts did not possess[5]	
Nephrotoxicity	Excess urea concentration in the blood(azotemia), anemia, increased concentration of hydrgen ions in the blood (acidosis), excess body fluids (over hydration), and high blood pressure (hypertension).	Grinded powder of cornsilk and binahong leaves and the extract was evaporated using rotary vacuum evaporator to obtain viscous extract that was referred to as ethanol extract. Cornsilk and binahong leaves could improve kidney function in rat model of kidney failure.Combination of half dose of each extract showed significant improvement in functioning of the kidney[6]	
Inflammation	pain (dolor), heat (calor), redness (rubor), swelling (tumor), and function loss in body.	Pretreatment with cornsilk extract reduced Cg-induced pleurisy exudate, number of leukocytes, oxidative stress, C3 protein level, and O levels at the inflammatory site and supplementation with cornsilk may be a promising treatment for inflammatory diseases that involve effects related to oxidative stress[8]	

Neuroprotection	Symptoms related to CNS disorders.	Maysin, a flavones glycoside reduced the cytotoxic effect of H2O2 on SK-N-MC cells, as shown by the increase in cell viability and by reduced LDH release. Maysin pretreatment also reduced the intracellular ROS level and inhibited PARP cleavage depending on dosage levels. DNA damage and H2O2-induced apoptotic cell death were significantly attenuated by maysin pretreatment and also increased the mRNA levels of antioxidant enzymes (CAT, GPx-1, SOD-1, SOD-2 and HO-1) in H2O2 (200 μM)-insulted cells[14].	
Oxidation effects	Uncontrolled production of reactive oxygen species and subsequent lipid peroxidation, protein damage and effects pf DNA strands breakage.	The CS extract was analyzed for the presence of phytochemicals such as flavonoids, phenols, anthocyanins, tannins, saponins, steroids, alkaloids and terpenoids using standard procedure [19]. Free radical scavenging activity was determined using DPPH assay as DPPH is an antioxidant, that was found to be stable. Methanolic extract was found to have maximum DPPH scavenging activity and maximum total antioxidant activity [21].	

- **Treatment of CKD (Chronic Kidney Disease)**

CKD is basically a common kidney disease, where patients will have gradual reduction of kidney function over time and it includes conditions that damage your kidneys and decrease their ability. If the disease gets worse, wastes and extra fluids will build up in blood and make thebody feel sick. Over time, the patient experiences a host of complications like high blood pressure, anemia, weak bones, poor nutritional health and never damage .In addition, this disease also increases the risk of having heart and blood vessels diseases. For its treatment, corn silk is usually prescribed in the form of cornsilk tea. Cornsilk tea has the function of increasing the urine output, which can help remove the toxins and wastes out, hence reducing creatinine level. In addition, it also helps remove the excess fluid out, which can help relieve the swelling. High blood pressure, being the most prominent symptom, is reduced with the help of cornsilk tea[6].

- **Anti-Diabetic Agent**

Diabetes is a glucose metabolic disorder that is associated with the abnormal functioning of the hormone; insulin.Insulin is secreted by the pancreas in the Islets of Langerhans by Beta cells. Diabetes is also referred to as Diabetes milletus in medical terms. A person with diabetes suffers from a condition where the

quantity of glucose in the blood is too elevated (hyperglycemia). This could happen either due to insufficient production of insulin by the body or the body produces no insulin at all.Sometimes, the cells do not respond to the insulin produced by pancreas properly.Due to this, there is build up of glucose in blood, which passes through urine.Even though, there is enough glucose in blood, the cells do not absorb it adequately for their energy requirements. The predominant symptoms of diabetes are systemic weight loss, smell of acetone in breath, nausea, vomiting, abdominal pain, polyuria, glycosuria, blurred vision, polydypsia and polyphagia.

For this study,Alloxan and adrenalin induced hyperglycemic mice were used .CS extract effects on different glycaemic properties like blood glucose, glycohemoglobin (HbA1c), secretion of insulin, pancreatic beta-cells that indicate damage, hepatic glycogen and gluconeogenesis were studied in hyperglycemic mice .The blood glucose and the HbA1c were found to significantly decrease in alloxan-induced hyperglycemic mice ($p < 0.05$, $p < 0.01$, respectively),after it was orally administered with the herbal extract.The insulin secretion level elevated in alloxa-induced hyperglycemic mice ($p<0.05$).Gradually after the mice were administered with corn silk extract 15 days later,partial recovery of alloxan-damaged pancreatic beta-cells was done due to which the body weight of the alloxan-induced hyperglycemic mice was increased gradually. But, ascending the blood glucose level induced by adrenalin and gluconeogenesis which is further induced by L-alanine, did not show inhibition in corn silk extract treatment ($p > 0.05$). There was no much significant difference between them and that of the control group($p>0.05$),eventhough the extract showed increased levels of hepatic glycogen in the alloxan-induced hyperglycemic mice. The action of corn silk extract on mice was by increasing insulin level and reovering injured beta cells , and not via increasing glycogen or inhibiting gluconeogenesis.The results suggest that in modern pharmacological study, corn silk extract may be used as a hypoglycemic food or medicine for hyperglycemic people [3].

- **Treatment of Urinary Tract Infection**

Medicinal herbs for treatment of bladder infection are among some of the oldest remedies recorded and have a long and successful history in treating UTIs. These bladder infections or urinary tract infections (UTI) are very common in women but less so in men. The main symptoms which usually are easy to treat are burning, itching and constant urge to urinate . Throughout the world, there are several reports that state the use of corn silk as a herbal extract for the treatment of UTI. Taking into reference a research article from Journal of Interculture and Ethnopharmacology,2012[4],the survey stated an estimate of patients suffering from different symptoms of UTI.78.57% of patients have had suprapubic pain,83.33%of UTI patients suffered from both urgency and frequent urination, while 76.19% patients had dysuria. For this experimental study, aqueous extract of cornsilk was prepared by adding 100mlof boiling water to 8gm of cornsilkfor 15 mins. The solution becomes cold and this extract was taken in dividend doses over 24 hours. Administration of aqueous cornsilk extract to these patients resulted in significant decrease in UTI symptoms after 5, 10 and 20 days from starting the treatment to baseline values. The use of this herbal medicine in treatment of chronic and acute UTI is not a new approach certainly. The main property of this herb that is used for this treatment is that it has a variety of secondary metabolites such as tannins,terpenoids,alkaloids and flavonoids; these metabolites have been found invitro to have specific antimicrobial properties. These results also showed reduction in values of routine urine examination like pus cells, RBCs, crystals, etc. Cornsilk can also be taken as a tea to sooth and treat the symptoms of UTI. Corn silk is best used in combination with other stronger antiseptic herbs to treat bladder infections but it will provide effective symptom relieve from burning and pain associated with UTI [4].

- **Anxiolytic Effect**

Anxiety is an emotion characterized by an unpleasant state of inner turmoil, often accompanied by nervous behavior, such as pacing back and forth, somatic complaints, and rumination[5].It is the subjectively unpleasant feelings of dread over anticipated events, such as the feeling of imminent death.[5] Anxiety is a feeling of uneasiness and worry, usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as menacing[5].The general symptoms include of anxiety disorders include uneasiness, compulsive behaviors,perfectionism,self doubt, excessive worry, irrational fears, chronic indigestions, muscle tension, stage fright, problem in sleeping, cold or sweaty hands or feet,breath shortness, heart palpitations(percieved abnormality of the heartbeat), not being able to be still and calm, dry mouth , numbness or tingling of hands or feet, nausea, muscle tension, dizziness. In a recent study, cornsilk has been evaluated for its anxiolytic potential. The anti-anxiety activity of petroleum ether, chloroform and ethyl acetate extract of cornsilk was tested using different animal models. The cornsilk was shade dried and powdered and packed into

Soxhlet apparatus and extraction was done by hot continuous percolation using rotary evaporator EYELA N-1100 and dried extract was preserved in vaccumdessicator with anhydrous silica gel blue[5].The different animal model tests that were used for the study were elevated plus maize test, mirror chamber test and hole-board test. Six groups of mice, five in each group were taken for study, where some groups of mice were treated with petroleum ether, chloroform and ethyl acetate extract doses. With course of time, chloroform extract of cornsilk after acute dosing possessed anxiolytic activity. Whereas, petroleum ether and ethyl acetate extracts of cornsilk did not produce significant effects on the animal models [5].

- **Treatment of Nephrotoxicity**

Kidney failure is a condition where the kidney is damaged and it can no longer perform the function of excretion properly. These conditions can result in accumulation of metabolic waste products that can cause toxicity of kidneys, thereby the whole body. This condition is termed as nephrotoxicity. This disease is generally irreversible and likely to lead to End Stage Renal Disease conditions. Therapies like dialysis can be done, but it consumes ample amount of time. An experimental study showed that cornsilk along with another leaf extract, binahong leaves, could cure problems related to nephrotoxicity. Grinded powder of cornsilk and binahong leaves each were extracted using ethanol by reflux method and filtered through Whatman filter paper. The total extract was evaporated using rotary vaccum evaporator to obtain viscous extract that was referred to as ethanol extract. Six groups of eight rats each were taken for the study. Except the 6^{th}, all the other groups were treated with gentamicin intraperitonially and Piroxican was administered orally for 7 consecutive days to induce kidney failure. Group 1 was continuously administered with piroxican until 4^{th} week. This was considered as the positive control group. Group 2 received cornsilk extract and piroxican until the 4^{th} week of therapy. Group 3 was administered with binahong leaf extract and piroxican until the end of 4^{th} week. Group 4 was administered with cornsilkextract,binahong leaf extract and piroxican. Group 5 also had the same administration as Group 4,but in slightly higher concentrations.Group 6 was treated with normal saline and tragacanth solution for 7 consecutive days and 4 weeks of therapy.This was considered as the negative control group.Creatine levels were determined in serum samples every week.24 hours after the 4^{th} week of therapy,all the rats in all groups were sacrificed and kidneys were quickly removed,weighed and fixed in parafine for histopathologicalobservation.Kidney tissue was later homogenized and centrifuged .The supernatant was used as MDA assay and catalase and SOD(superoxide dismutase)activity was determined.Serumcreatinelevel,serum urea level, catalase activity of kidney supernatant,lipid peroxidation by measuring thiobarbituric acid reactive substances from kidney supernatant ,kidney index,SODactivity,histological and statistical determination was done. From this analysis, it was shown that cornsilk and binahong leaves could improve kidney function in rat model of kidney failure.Combination of half dose of each extract showed significant improvement in functioning of the kidney[6].

- **Anti-Inflammatory Activity**

Inflammation is part of the complex biological response of vascular tissue system to harmful stimuli,like pathogens, damaged cells, or irritants. The classical signs of acute inflammation are pain (dolor), heat (calor), redness (rubor), swelling (tumor), and function loss. Inflammation is a protective attempt by the organism to remove the injurious and harmful stimuli and to initiate the healing process. Inflammation does not mean an infection, even in cases where inflammation is caused by infection. Although infection is caused by a pathogenic microorganism, inflammation is one of the responses of the organism to the pathogen. However, inflammation is a stereotyped response, and therefore it is considered as a mechanism of innate immunity, as compared to adaptive immunity, which is pathogenspecific.Inflammation can be classified as acute and chronic. Acute inflammation is the initial response of the body to harmful stimuli which is achieved by the increasing movement of plasma and leukocytes (especially granulocytes) from the blood fluids into the injured tissues in the body system. A number of biochemical events propagates and matures the response of inflammation,which involves the local vascular system, the immune system, and various cells involved within the injured tissue. Prolonged inflammation, also called as chronic inflammation, leads to a progressive shift in the type of cells that is present at the site of inflammation and is characterized by simultaneous destruction and healing of the tissue from the process of inflammation. Generally two types of medicine are used to treat inflammation effects,steroidal and non steroidal anti-inflammatory drugs , that are available in market. But, they have lots of side effects as well as adverse effects in the body, so herbal medicines are now being frequently used in the treatment of such diseases, because herbal medicines have little or no side effects [7]. Corn silk is very well known for its anti-inflammatory properties. Traditional medicine followers are of the view that it can

be used in reducing the pain caused by inflammatory ailments like gout and arthritis. The diuretic action of cornsilk may prevent excess uric acid formation in the body joints, which further leads to gout pain. However, this should not be taken as a cure for arthritis related conditions.The anti-inflammatory efficacy of cornsilk extract of carrageenin (Cg)-induced pleurisy, exudate formation, and cellular infiltration, tumor necrosis factor alpha (TNF-Î±), interleukin 1 beta (IL-1Î²), vascular endothelial growth factor alpha (VEGF-Î±), interleukin-17 (IL-17), C3 and C4 complement protein levels, adhesion molecule (ICAM-1) and inducible nitric oxide synthase (iNOS) levels, nuclear factor kappa B (NF-ÎºB) activation, and total antioxidant activity were studied respectively using a rat as a model organism. Pretreatment with cornsilk extract reduced Cg-induced pleurisy exudate,leukocytes number, oxidative stress, C3 protein level, and O levels at the inflammatory site. Pretreatment with cornsilk extract also inhibited TNF-Î±, IL-1Î², VEGF-Î±, and IL-17A and blocked inflammation-related events (ICAM-1 and iNOS) by activation of NF-ÎºB. Supplementation with cornsilk may be a promising treatment for inflammatory diseases that involve oxidative stress[8].

- **Neuroprotective Effect**

Neuroprotection refers to the relative preservation of neuronal structure and/or function[9]. In the case of a neurodegenerative insult,the relative preservation of neuronal integrity implies a reduction in the rate of neuronal loss over time, which can be expressed as a differential equation[9]. Neuroprotection aims to prevent or slow disease progression and secondary injuries by halting or at least slowing the loss of neurons[10].There is in-vitro data suggesting that herbal medicines like corn silk inhibits cholinesterase, resulting in neuroprotective effects of Alzheimer's disease, quoted by Natural Medicine Database. The neuroprotective effects of ethyl acetate and ethanol extract of cornsilk from four corn varieties (var. i*ntendata*, *indurata*, *everta* and *saccharata*) was investigated by measuring acetylcholinesterase (AChE) and butrylcholinesterase (BChE) inhibition [11]..AChE and BChE are enzymes that degrade the neurotransmitter acetylcholine through hydrolysis and lead to Alzheimer's disease; hence, such diseases might be prevented by inhibition of AChE and BChE[12]. Among the different varieties of corn, the EtOAc extract of var. *intendata* (200 µg/mL) had the highest AChE inhibition (96.69%), while at the same concentration EtOAc extract of var. *everta* exhibited the highest BChE inhibition (41.46%). High inhibition of AChE by EtOAc extract of CS showed that CS extracts have the potential to be used in neuroprotective applications [13].Neuroprotective effects of maysin, which is a flavone glycoside that was isolated from the corn silk of a Korean hybrid corn Kwangpyeongok, against oxidative stress (H2O2)-induced apoptotic cell death of human neuroblastoma SK-N-MC cells,were investigated. Maysin cytotoxicity was determined by measuring viability using MTT and lactate dehydrogenase (LDH) assays. Intracellular reactive oxygen species (ROS) were measured using an assay named 2,7-dichlorofluorescein diacetate (DCF-DA) assay. Apoptotic cell death was monitored by methods of annexin V-FITC/PI double staining and a TUNEL assay. Antioxidant enzyme mRNA levels were determined by using a real-time PCR. The cleavage of poly (ADP-ribose) polymerase (PARP) was measured by the technique of western blotting. Maysin pretreatment reduced the cytotoxic effect of H2O2 on SK-N-MC cells, as shown by the increase in cell viability and by reducing the LDH release. Maysin pretreatment also reduced the intracellular ROS level and inhibited PARP cleavage, depending on the dosage. In addition, DNA damage and H2O2-induced apoptotic cell death were significantly decreased by maysin pretreatment. Moreover, maysin pretreatment (5-50 µg/ml) , significantly and dose-dependently, increased the mRNA levels of antioxidant enzymes (CAT, GPx-1, SOD-1, SOD-2 and HO-1) in H2O2 (200 µM)-insulted cells,when exposed for 2 hours. These results suggest that cornsilkmaysin has neuroprotective effects against oxidative stress (H2O2)-induced apoptotic death of human brain SK-N-MC cells through its antioxidative action. This report is the first regardingneuroprotective health benefits of cornsilkmaysin by its anti-apoptotic action and by triggering the expression of intracellular antioxidant enzyme systems in SK-N-MC cells [14].

- **Anti-Oxidant Property**

The term "antioxidant" is mainly used for two different groups of substances, industrial chemicals which are added to products to prevent oxidation effects, and natural chemicals found in foods and body tissues which are said to have numerous beneficial health effects.The main characteristic of an antioxidant is its ability to trap free radicals.These free radicals may oxidize nucleic acids, proteins, lipids or DNA and can initiate degenerative disease. Antioxidant compounds like phenolic acids, polyphenols and flavonoids scavenge free radicals such as peroxide, hydroperoxide or lipid peroxyl and thus inhibit the oxidative mechanisms that lead to degenerative diseases [15]. Antioxidants are free-radical scavengers which provide protection to living

organisms from damage caused by uncontrolled production of reactive oxygen species and subsequent lipid peroxidation, protein damage and breaking DNA strands. Therefore, there is a need for isolation and characterization of natural antioxidants having less or no side effects, for use in foods or medicines to replace synthetic antioxidant [16].Corn silk has been used traditionally as a medicine for its antioxidant properties. According to an experimental study, phytochemical constituents, free radical scavenging activity and total antioxidant activity of various extracts of corn silk were carried to test its anti-oxidant activity. . Phytochemicals are basically plant chemicals and are defined as bioactive nonnutrient plant compounds in fruits, vegetables, grains, and other plant foods that have been linked to reducing the risk of major chronic diseases [17]. It is estimated that 5000 individual phytochemicals have been identified in different fruits, vegetables, and grains. They are also called as the secondary metabolites. The phytochemicals vary in distribution within the plant parts, as well as in their occurrence within plant species [18]. Corn silk from fresh sweet corn was removed, shade dried and stored at room temperature for further analysis and was used to screen the presence of phytochemicals. For this, five grams of the corn silk was weighed, mashed and homogenized with 50ml of alcohol, acid (1% HCl) and water separately. These were boiled effectively for an hour, cooled, filtered and used for phytochemicals analysis. The extract was analyzed for the presence of phytochemicals such as flavonoids, phenols, anthocyanins, tannins, saponins, steroids, alkaloids and terpenoids using standard procedure [19]. Soxhlet extraction of the plant sample. The shade dried corn silk was grounded to form coarse powder. Dried corn silk powder was successively extracted with different chemical solvents like petroleum ether, benzene, chloroform, ethyl acetate, methanol and ethanol with their increasing order of polarity by soxhlation for a period of 6- 12 hours. For the extraction, 20g of the dried powdered sample was used with 200ml of the solvent. Then the obtained extract was collected separately and kept for further analysis. The qualitative phytochemical tests of various extracts of corn silk were carried out using standard procedure [15]. Assay of free radical scavenging activity (DPPH activity).The stable 1, 1-diphenyl-2-picryl hydrazyl radical (DPPH) was used for the determination of free radical scavenging activity of the various extracts. Different concentrations (10-100µg) of each of the extract of corn silk were added with an equal volume of methanolic DPPH solution (0.5mM) and incubated at 370 C for 30 min. DPPH solution mixed with methanol was used as positive control and methanol alone acted as a negative control. When DPPH reacted with the antioxidant, DPPH was reduced and the colour changed from deep violet to light yellow. This was measured at 517 nm. [16].Screening of Phytochemicals showed positive results for the presence of flavonoids, alkaloids, phenols, steroids, glycosides, carbohydrates, terpenoids and tannins. Phytochemicals were extracted best in methanol solution. Free radical scavenging activity was determined using DPPH assay as DPPH is found to be a stable antioxidant. Methanolic extract was found to have maximum DPPH scavenging activity and also maximum total antioxidant activity. This could be due to the presence of flavonoids, alkaloids, phenols, steroids, glycosides and tannins in corn silk.

Apart from these, corn silk is also used since long time as a remedy for obesity and has no major harmful side effects. It is the most reliable and a completely safe and natural remedy for weight loss. Corn silk may enhance effects of blood clotting, according to Naturopathy Digest, an informational website explaining naturopathic medicine and detailing practical alternative treatments. A standard dosage of corn silk is up to 30 grams, steeped in boiling water and consumed as a tea.Corn silk should not be used if you're already taking medications for blood clotting [20]

Conclusion

Aside from a refreshing, mild flavor, cornsilk offers a healthy dose of potassium and vitamins C and K.The major nutrient in cornsilk is potassium, which is responsible for all of the benefits that come from this part of the corn plant. It is believed that this herbal extract can act as a powerful diuretic and that probably accounts for the help that cornsilk can provide for the urinary system. For urinary tract infections, it's been found that the potassium in cornsilk can help with the pain and restore back the health. One of the ways it does this is by soothing the inflamed tissues that are cause these problems. Cornsilk may help to relieve the pain and symptoms associated with kidney stones too. Cornsilk also improves blood pressure, thin theblood and it may even support the liver to function better when it comes to producing bile. Cornsilk can be used in the form of a decoction, tincture, or can consume cornsilk capsules to bring relief.Therefore, from the above review, the importance of cornsilk in the medicinal field is justified. It is not only a natural herb, but also a safe herb which

does not produce drastic side effects because of its chemical structure, because of which this herb is gaining utmost importance amongst all other popular and important plant herbs.

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