Review of literature

- **Puri D.et al(1994)** Studied In East Africa, hot water extract of Hibiscus sabdariffa linn leaves is taken orally to relieve coughs. Unripe fruit juice is taken orally with salt, pepper, as a fecide and molasses as a remedy for biliousness. Hot water extract of leaves is used as a flavouring agent, a diuretic, choleric, febrifuge, hypotensive, to decrease viscosity of blood and to stimulate intestinal peristalsis. Externally the extract is used for sores and wounds.

- **Bajpai H.S.et al(1978)** Studied H. sabdariffa In Egypt, decoction of hot water extract of the calyx is taken with sugar three times daily for high blood pressure. Hot water extract of the entire plant is taken orally for heart and nerve diseases, as a laxative, to reduce weight, as a diuretic, to activate and neutralize hepatic secretion, to activate gastric section as a digestive for arteriosclerosis, as a diaphoretic, to give a euphoric impression and as an intestinal antiseptic. Leaf essential oil is taken orally to treat cancer.

- **Tiwari K.A,(2001)** Studied multiple approach of natural antioxidants therapy in imbalance in antioxidance defence and human diseases, the orige of disease of multifactorial nature is being understood due to vitiation in basic homeostatic balance phenomenon in the body a majority of disease condition like atherosclerosis, hypertension ischemic disease cause due to imbalance between prooxideant and anti-oxidant homeostasis. anti-oxidant principal from natural resources posseses multi facetedness in thir multitude and magnitude of activities and provide inormous source in correcting the inbalance there is much attention is being directed to harness and harvest the anti-oxidant source pricipales from natural sources like H.sabdariffa.

- **Michele L.D et al (2007)** Investigated the efficacy and safety of H.Sabdariffa for treating obesity fourteen herbalists (harb sellers) were interviewd about the popular use of plant with weight loss purpose in porto alegre, south brazil city. all identified species scientific data was reviewed p’cological data collected mainly from animal and invitro studied. preclinical data indicate the potential role associated with obesity such as hyperlipidemia.

- **Morton J.F,(1974)** Studied The different parts of the Hibiscus sabdariffa plants extensively examine their chemical constituents like anisaldehyde, anthocyanins, ascorbic acid, beta sitosterol, flavonoids, tannins, carbohydrates, organic acids, chrysanthenin, citric acid, ergosterol, eugenol, fat, gossypol, hibiscetin, hibiscus acid, hibiscin, hibiscitrin, were reported in Hibiscus sabdariffa Linn and usefulness of calyx for making sauce, jelly and other preserve, desserts, and wine.
Bouquet A. et al, (1969) Reviewed dried calyx at a concentration of 10.0% of diet in the ration of rats showed weak alkaline phosphatase inhibition activity, glutamate oxaloacetae transaminase inhibition activity and glutamate pyruvate transaminase inhibition activity and also reported that dried calyx at a concentration of 5.0% of diet in the ration of rats, showed the antihypercholesterolemic, antihyperlipidemic and antihypertriglyceridemia activity.

Osman A.M, et al, (1975) Studied ethanol / water (1:1) extract of dried leaves at a concentration of 250.0mg/ml on agar plate was active on Apergillus fumigatus, As pergillus niger, Butrytis cinerea, Penicillium digitatum, Rhizopus nigricans, Trichophyton mentagrophytes and saccharomyces pastorianu extract of Hibiscus sabdariffa l. in toxicity induced by chronic administration of sodium nitrate in wistar rats. Since preliminary phytochemical screening.

BAKO I.G, et al (2009); Investigated the antioxidant activity of ethanolic seed extract of H. Sabdariffa in sodium nitrate toxicity induced wistar rat. 25 adult rat were group randomly in to 5 group all group received narmal saline, vit C and sodium nitrate daily for 60 days resp. animal sacrificed and blood sample for analysis of total protein and haematologocal idea toxicity induced by cronic administration of NaNO3 seem to be allivivated by antioxidant effect of H. Sabdariffa. Hibiscus sabdariffal. seed extract are characterized by a very low degree of toxicity with LD50 of above 5000 mg/kg in rats.

Hatil Hashim, et al (2006), evaluated the antibiotic effect of Hibiscus sabdariffa, E- coli showed higher resistance to the plant extracts whereas Pseudomonas aeruginosa is more sensitive. The objectives of this work are to determine the presence and effectiveness antibacterial activity in the crude extracts of some of the traditionally used medicinal plants that are used to treat respiratory tract infections Hibiscus sabdariffa extracts showed extensive inhibition zone and were, therefore, effective.

Hala H. Mossalam, et al (2011) Evaluated that aqueous extracts of Hibiscus sabdariffa possess a potent protective effect from the oxidative stress induced by sub lethal dose of Malathion on the kidney. This study was set to evaluate the possible protective effect of Roselle on nephro-toxicity induced by sub-lethal dose of Malathion in rats. Organophosphorous (OP) pesticide is applied to numerous crops, including wheat and corn. Residual amounts of organophosphorous pes the OP toxicity have been proposed, including the induction of cellular proliferation, oxidative stress and immune-toxicity. ticides have been detected in soil, vegetables, grains and other food product.
Ismaila A. Umar, et al. (2009) investigated the pathological changes in blood and organs of *T. congolense*-infected rats. The effects of aqueous extract of *Hibiscus sabdariffa* calyces on haematology and pathological changes in some selected organs during experimental. Rats were intraperitoneally infected with *T. congolense* (Karu stock). One group was administered with the aqueous extract and another given a solution of vitamin C in drinking water.  

Deependra Soni, et al. (2011) investigated the experimental work on root part, the presence of various phytoconstituents like flavonoids, tannins, protein, sterol etc. the traditional approaches of the ancient healers about the plant Hibiscus rosa sinesis belonging to the family Malvacae. This Plant is a boon to us from the nature as it claims its potentiality as a wide range of herb. Morphological studies of root showed the presence of various diagnostic characters. Ash value, extractive value and moisture content was determined for quality standard of drugs.  

Agbafor K.H, et al. (2011), Investigated the antioxidant potential of extracts and some of the therapeutic uses of these plants. the presence of saponins, tannins, anthraquinones, terpenoids, and flavonoids in all the extracts, while alkaloids were detected in extracts of *Vitex doniana* only, and cardiac glycosides occurred in extracts of *Mucuna pruriens* only. All the extracts inhibited DPPH radical in a concentration-dependent manner, water extract of *Vitex doniana* producing highest inhibition which was not significantly different (P > .05) from vitamin C. The extracts produced a significant decrease (P < .05) in liver MDA, while the levels of SOD and CAT significantly increased (P < .05) relative to the positive control.  

Saleh A. et al. (2010), Investigated the gastroprotective effects of ethanolic extract of the calyces of *H. sabdariffa* (EEHS) by employing hypothermic resistant stress- and various chemical induced gastric ulcer models alongside biochemical and histological assessment of gastric tissue in rats. The Roselle contains a number of phytochemical constituents including quercetin, anthocyanin, L-ascorbic acid and protocatechuic acid. It also contains anisaldehyde, arachidic acid, β-carotene, β-sitosterol, delphinidin, gossypetin and hibiscetin  

Titilayo O. Fakeye et al. (2008) evaluated the toxic effect of oral administration of extract of dried calyx of *H. sabdariffa*, the effect of 90 days the oral administration of water and alcohol extract were evaluated in albino rat haematological, biochemical, and histopathological changes were monitored every 30 day. the death of animal was preceded by a severe loss in weight accompanied with diarrhea in animal on the 2000mg/kg. significant reduction in erythrocyte count was observed.
Yadong Q. et al (2005), Studied the biological characteristics, food use, and medicinal values of Roselle, Hibiscus sabdariffa. The medicinal uses are mild laxative, diuretic, tonic, wound and sores. The fresh calyx rich in riboflavin and nicin and iron.

Hanumanthacher Joshi et al. (2006), Investigated the aqueous extract of calyces of H. sabdariffa might prove to be a useful memory restorative agent in the treatment of dementia seen in elderly. The underlying mechanism of action can be attributed to its anti acetylcholinesterase propert. Nootropic acitivity of calyces of Hibiscus sabdariffa Linn. was studied in mice. Elevated plus maze and passive avoidance paradigm were employed to evaluate learning and memory parameters. Scopolamine (0.4 mg/kg, i.p.) was used to induce amnesia in mice.

Ellington et al. (2004), US20040073964 A1 Invented the use of polysaccharide containing arabinose, galactose, and hexuronic acid in promoting in vivo and vitro survival and improved function of sperm, oocytes and embryos. Invention provide method and composition for improving the function of ger cell (sperm and oocytes) and embryos both in vivo and vitro polysaccharide occur in nature as a water soluble polymer obtain from gum or peptic function of plant like H. sabdariffa.

Hambrook, (2009), US20090232786, A1, Invented herbal formulation for cancer, it predicted in identification and combination of number of plant or there parts which are usefull in treatment or prophylaxis of cancer or inflammation and in particular prostatic cancer and promotion of well being and health. In preferred embodiment the combination comprises ingredient including wild rosella (H. sabdariffa).

Vanata R. et al (2007) Evaluated the antipyretic activity of the extract of the H. sabdariffa calyx on noceptive response using writhing hot plate and formation test in mice and the antipyretic in yeast induced fever in rat. Antiinflammatory activity was also investigated with the help of ethanol extract of the dose of 800 mg/kg, the result suggest that both extract of H. sabdariffa calyx possesses antipyretic activity through the mechanism that are different from aspirine.

Omotuyi I.O et al (2010) Investigated the circulating level of reproductive hormone in rabbits. The anthocynin control and experimental were administered 200 mg/kg oral doses of the different preparation, anthocynin rich extract H. sabdariffa I to rabbits is associated with high circulating prolacting in male and non lacting female rabbit. this may be potentially important in
phytotherapeutic induction of milk production in lactating animal. Long term reduction in circulating FSH level might play important in faild follicular development in developing female animal and gonadol atrophy in matured animals. ²⁹