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Assessment And Formulations Of Selected Herbal Plants

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Abstract : In this paper under the microscope as well as the macroscope, it was not difficult to identify various plant components such as stamata, vascular bundles, xylem, phloem, calcium oxalate crystals, and other components and structures. The levels of adulteration in MEDO, MEAF, and MEOL were lower, despite the fact that they included larger quantities of polyphenols. All of the active components, including stigma sterol, ursolic acid, β-sitosterol, and Latifolia A, were identified by MEDO, MEAF, and MEOL, respectively, in that particular sequence. Included in the extract were all three of the chemicals. TLC, NMR, IR, and MS all produced favorable results when they were tested. This was the case for all of them. In the aftermath of its separation, the substance was used in the production of tablets and pills. F1–F4 were all prepared to take off. The following tests were used to investigate these: disintegration, angle of repose, Hansuers ratio, Carr's index, and invitro breakdown. When used as a mixture, F4 came out on top. At a dosage of 200 mg/kg, both the combination and the crude extract were identical. Although neither PC-01 nor PC-02 were able to accomplish the same amount of reduction in blood sugar levels as the diabetic control, they did succeed in increasing antioxidant levels. Our objective was to determine if β-sitosterol and MEAF may potentially prevent diarrhea. The size of the small intestine, the total volume of feces, and the amount of diarrheal feces were all reduced in both groups as compared to the group that served as the disease control. The ulceration score was lower when the antiulcer medication Latifolia A was administered rather than MEOL, in comparison to the group that served as the control for the ulcer. According to the results of all three models, the specific chemical combination performed better than crude extracts, confirming its effectiveness. Latifolia A, β-sitosterol, ursolic acid, and stigma sterol have all been shown to be capable of effectively treating ulcers, diabetes, and diarrhea, according to the findings of a group of researchers. There are a variety of dosage forms that may be created from them.

Keywords: Invitro breakdown, MEOL, Diabetes, Polyphenols, Diarrheal feces.

1. Introduction

Since 1967, the glucosamine-nitrosourea drug known as streptozocin (STZ) has been the center of attention for research involving human subjects. A significant number of animals acquire diabetes as a result of STZ. The development of diabetes may be brought on by a single or many low-dose

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injections of STZ. STZ is the medication that is used the majority of the time when diabetic rats are required. It is [11].

Streptozocin administered intravenously at a dose of sixty milligrams per kilogramme induces adult Wistar rats to develop fake diabetes mellitus for a period of up to four days. Enlargement of the pancreas and the degeneration of the Langerhans islet β cells are also common experiences for these individuals. The mice had already developed diabetes by the time they were three days old because beta cells had been destroyed. Nicotinamide-adenine dinucleotide, often known as NAD, is thought to play a crucial part in the development of diabetes [12]. This is due to the fact that it causes beta cells in the pancreatic islet to change their structure. Toestablish diabetes in male New Zealand rabbits, a single intravenous injection of streptozocin at a dose of 65 milligrams per kilogram of body weight was given to the rabbits.

Rats' STZ-induced diabetes: a mechanism study:

Streptomyces achromogens bacteria are responsible for the production of STZ, an antibiotic that has a broad variety of possible applications [13]. Within the structure of this substance, a glucose molecule is connected to a methyl-nitrosourea group that is highly reactive. It is hypothesized that this is the source of the power of STZ to kill cells. As shown in Figure 1.3, the glucose molecule acts as a channel via which the drug is transported to the cells of the pancreas. STZ has a relatively short half-life because of the very quick metabolism that occurs in the liver and the following clearance that occurs via the kidneys. It is possible that persistent hyperglycemia will continue to cause pain to the kidneys and liver even after STZ has been eliminated from the body. This is the reason why research into the effects of STZ diabetes on these organs as well as other organs, including as the heart, joints, and brain, is still continuing [14].

It is possible to discover alloxan hydrate in water. Among the many names that have been given to the oxidized pyrimidine derivative alloxan are 2, 4, 5, 6-pyrimidinetetrone and 2, 4, 5, 6-tetraoxypyrimidine. Additional names include alloxan. The combination of urea with oxalic acid in urine results in the production of oxaluric acid. Uric acid is secreted by the uterus, which results in the production of allantoin. In the first version of the formula for alloxan, uric acid and nitric acid were required ingredients. Diabetes risk is increased when the medicine is injected, regardless of whether it is administered intraperitoneally or subcutaneously.

Action method:

After alloxan-induced diabetes, it is usual practice to give the patient the appearance of having insulin-dependent diabetes. Alloxan's mechanism of action has been thoroughly investigated, and the results have been uncovered. In spite of the absence of glucose, alloxan is able to quickly activate the production of insulin, as shown by several investigations. This insulin synthesis that was produced by alloxan was only temporary and finally stopped, even when high glucose concentrations were employed. Because alloxan is quickly absorbed by pancreatic β cells before it exerts its effects in the pancreas, it is hypothesized that alloxan is a contributing factor in the development of diabetes. A number of reducing chemicals, including reduced glutathione (GSH), ascorbate, cysteine, and protein-bound sulfhydryl (-SH) groups, have the potential to drive pancreatic ² cells to undergo reduction as well. An alloxan disulfide bond is formed with the two -SH groups that are present in the sugar binding domain of the glucokinase enzyme. As a consequence of this, enzyme activity is interrupted. In the process of reducing alloxan, dialuric acid is produced as a byproduct. This acid deoxidizes back into alloxan, which is the first step in the redox cycle that results in the production of superoxide radicals and other reactive oxygen species (ROS). The release of ferric ions by very intense oxygen radicals is

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the first step in the process of ferritin breaking down into ferrous and ferric ions. In the presence of superoxide dismutase (SOD), superoxide radicals have the potential to be converted into hydrogen peroxide (H2O2) via the process of reduction. According to the Fenton reaction, the generation of hydroxyl radicals that are very unstable takes place when iron and water are present in the environment.

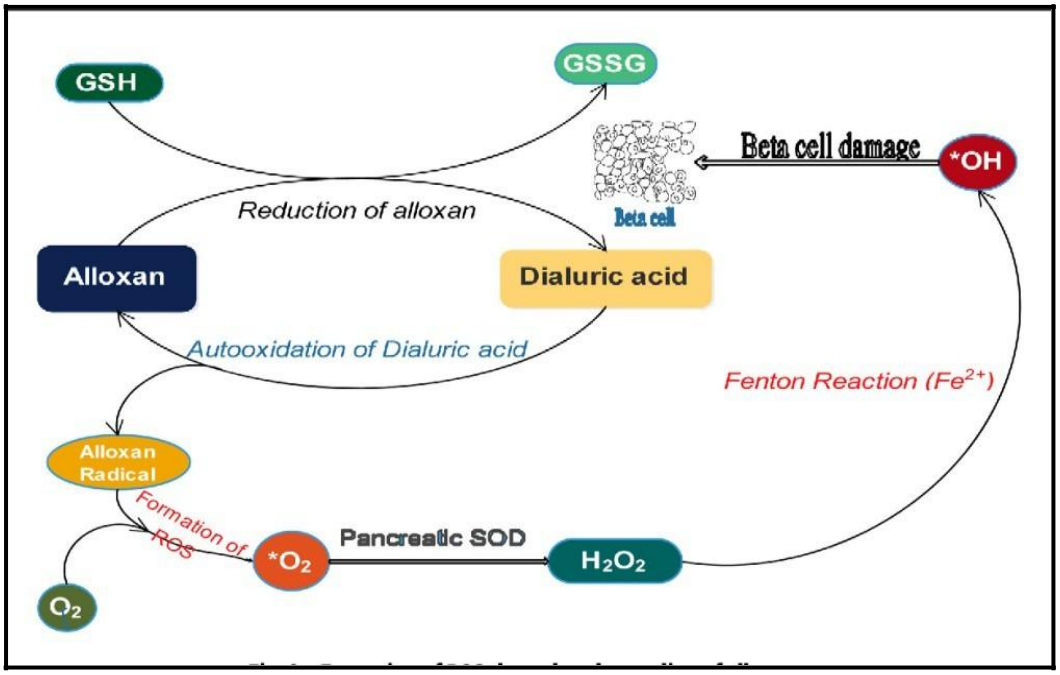

Fig 1: Diabetic Mechanism Induced by Alloxan

Reducing the rate of stomach acid production

It is possible to accomplish a reduction in acid production by a variety of methods.
One of the first ones is when there is an accumulation of gas in the stomach as a result of a prolonged time of fasting. An rise in acidity brings in a decrease in pH, which in turn makes it more difficult for D cells to produce somatostatin, which in turn prevents gastrin from being secreted. The enterogastric reflex starts to work after the chyme has arrived to the duodenum during the digestive process. This response may take place in situations when there is a substantial amount of membrane edema, a significant amount of protein breakdown byproducts, excessive acidity in the small intestine, or pain in the small intestine. A signal is sent to the vagus nerve in the stomach by the neurological system of the gut, which causes it to slow down. It is the brain and the stomach that are the recipients of these signs. The process of emptying the stomach is slowed down by the enterogastric response after the intestines have reached their capacity.

These entero-endocrine cells are responsible for the release of secretin and cholecystokinin whenever the duodenum is filled with chyme. It is necessary to have these compounds Tofinish digestion and put a stop to the creation of stomach acid. In reaction to an excessive amount of stomach acid production, S cells in the duodenum produce a substance called secretin.

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2. Literature Review

1) Tian W *et.al.*,2022 [56]: Unconventional well types, such as complex and horizontal wells, are being used more often as a result of the increasing stringency of national environmental protection legislation. The addition of lubricants to drilling fluid is becoming more necessary as a consequence of this. When it comes to water-drilling fluids, having immediate access to lubricants that are beneficial to the environment is very necessary. Within the scope of this study, the Chinese yam (Dioscorea oppositifolia L.) was investigated for its possible use as a drilling lubricant. Not only did the researchers investigate the impacts of the Chinese yam slurry on other materials, but they also investigated the lubricating properties of drilling fluid at a range of temperatures. A valuable component in this procedure is Chinese yam slurry. This is due to the fact that it has good mixing capabilities and has the ability to boost the stickiness of changed drilling fluids. For the purpose of our investigation, we made use of microscopy and thermogravimetric analysis.

2) Ren YJ *et.al.* 2021 [57]: *The stems and leaves of Dioscorea oppositifolia L. were used to extract a number of chemicals, including Dioscopposin A (1) and B (2), twenty-one recognized compounds (3-23), two unknown compounds, and a few unique non-sesquiterpenoids. A significant amount of spectroscopic data was carefully reviewed Toascertain the structure of these objects. The exact combinations were found by comparing the electronic spherical dichroism bands that were expected to be noticed with those that were actually observed. The MCF-7 cell growth test was used Toevaluate the estrogenic potential of each possible drug. There are more compounds than compounds 2, 3, 7, 13, 15, 16, and 21 that have an effect on development.*

Vivek S *et.al.* 2020 [58]: There is a possibility that the nutrient density of this category of plants, which falls under the label "yam," is greater than that of tropical root crops. That is fantastic! provider of important, needed components. The Western Ghats are home to a greater number of China variety and five-leaf yams than the Eastern Ghats, although both types of yams are grown to a significant extent in both regions. On the other hand, early cellular activity and effects from the vast majority of yams are often neither constant nor evident. Todetermine the chemical composition, antioxidant properties, and cell death of the root samples obtained from D. oppositifolia and D. pentaphylla, further investigation was carried out. For the purpose of the investigation, a preliminary formulation was developed, which included the following constituents: nitrogen, water, crude protein, free sugars, and buffer protein.

3) Zaho C *et.al.*2019 [59]: Dioscorea hamiltonii and the Chinese yam are two examples of plants that belong to the Dioscorea family and are consumed by the Chinese people. These plants are also used in Chinese medicine and in Chinese cuisine. Todetermine the potential cause of DO and DH, a comparative analysis of the most important components and activities was carried out. The qualitative and quantitative descriptions of the immune-boosting, anti-inflammatory, and overall immune-controlling activities of DO and DH are compared and contrasted.

4) Sharma A *et.al.*2019 [60]: By extracting the active components of herbal plants, it may be possible to demonstrate that these plants provide physiological advantages. This revelation provides more evidence that the study of chemistry has been essential in the creation of medications that are more effective. In the course of this research, the bark of the Dioscorea pentaphylla plant was used. The antibacterial and wound-healing qualities of this substance have been depended upon by humans for a considerable amount of time. Teethaches and foul breath may be alleviated by chewing and swallowing the root of this plant. It is also used to treat toothaches. The use of a cure derived from

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plants has shown potential in the treatment of syphilis and eczema. The most important objective of this investigation was to investigate the fluorescence of this species and to discover the first phytochemical characteristics of this species.

5) Jeong EJ et.al.2016 [61]: One of the traditional use of the plant Dioscorea oppositifolia, which is also used in culinary preparations, is to alleviate stomach problems. As was shown in the earlier research, D. oppositifolia was able to decrease both the production of fat and the activity of pancreatic lipase in vitro. In the course of this examination, the key research topic that was being investigated was the amount to which D. oppositifolia may potentially assist in avoiding obesity in mice that were fed a diet that was rich in fat. ICR mice that were female were subjected to testing after being fed a diet rich in fat and DO n-BuOH extract for a period of several months. To serve as a positive control, mice that were fed a diet heavy in fat were given 15 milligrams per kilogram of orlistat by oral administration. After being fed a meal heavy in fat and the n-BuOH extract of DO, female ICR mice exhibited substantial decreases in their body weight, the weight of their adipose tissue, and their lipid composition. It was shown that a formulation of D. oppositifolia was able to effectively prevent the absorption of dietary fat.

6) Das SU *et.al.*2013 [62]: A monocotyledonous plant known as Dioscorea is often referred to by its colloquial name, "yam." Dioscorea is a genus of plants that includes a number of different species, many of which have clinical or agricultural use. For the purpose of satisfying the need for this essential plant, it is possible to cultivate species of Dioscorea in a controlled setting. It is essential that you adhere to these measures Toguarantee that your Dioscorea receives the minerals, natural components, vitamins, and carbohydrates that it need Torecover as quickly as possible. A selection of significant works on the Dioscorea micro growth method that were published in journals that were subjected to peer review is included in this study.

7) Palupriya & Mohan 2012 [63]: *The effectiveness of the antioxidant properties of the tuber of Dioscorea oppositifolia was the primary subject of this work. There is a possibility that antioxidants may lessen the damage that free radicals do to cells, assist in the treatment of inflammation and cardiovascular disease, and carry out a number of other potentially beneficial effects. The ethnomedical methanol extract of the roots of Dioscorea oppositifolia was the primary focus of our study. We investigated the antioxidant, flavonoid, and total phenolic characteristics of this extract in vitro. A number of different methods were used Todetermine the antioxidant activity in vitro. The tuber of the fruit of the Dioscorea oppositifolia plant has powerful antioxidant capabilities. According to the data, phenolic acids are the most important component of antioxidants that has an active component. According to the findings of the study, the plants that are being investigated include a number of chemicals that have the ability to scavenge free radicals and maybe possess antioxidant qualities.*

8) Felix R *et.al.* 2009 [64]: It is possible to demonstrate that medicinal plants have physiological effects by extracting the beneficial components that they contain. this, it makes it easier to evaluate medicines, which results in the development of more potent medications. For the purpose of this study, the plant species that was used was Dioscorea oppositifolia L. (Dioscoreaceae). In the past, people would treat wounds like as cuts and scrapes with the antibiotics that were present in this plant. It is recommended that you consume the root if you have toothaches or chronic bad breath. Utilizing an extract derived from the whole plant has the potential to treat secondary syphilis as well as eczema. The primary purpose of this investigation was to investigate the basic phytochemical features of the species as well as fluorescence tests.

9) In 2007, Poornima and Ravi Shankar [65]: Wild yams of two different types, D. oppositifolia and D. pentaphylla, have been successfully maintained in an environment that is under constant

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observation and control. Nodal explants were used to culture a large number of stems on a Murashige & Skoog (MS) medium that was supplemented with 6-benzylaminopurine (BAP) and activated charcoal at a concentration of 0.3% by weight percent.

2.1) *The Latifolia plant:*

LC-QT0-MS was used to evaluate the methanolic extracts of three Egyptian plants: O. pes-caprae, O. corymbosa, and O. latifolia. The purpose of this analysis was to identify the chemical forms that were included in the extracts. It was discovered that these plants may have therapeutic properties (Draz et al., 2022 [66]). The subsequent step was the identification and description of fifty compounds that belonged to a variety of chemical classes. In the beginning, 33 of these were found in the Oxalis L. plant. Furthermore, the flavone compounds of five different types were successfully isolated from O. pes-caprae. In order to determine their structures, procedures such as acid hydrolysis, 1H-NMR, UV/vis, and HR-ESI-MS were used**.**

Shamso EM *et.al.* 2021 [67]: The inquiry made use of both plants from herbariums and compounds that were not before known to science. During the course of the investigation, there were five species and one variation that were identified, and they included three categories. There are two species that belong to these groupings: O. latifolia and O. corymbosa. Both Oxalis corniculata L. var. corniculata (the type variant) and Oxalis corniculata repens (Thunb.) Zucc were found in Egypt, which suggests that this species may be able to take on a variety of morphologies. This particular species of O. anthelmintica is only found in the southern part of Egypt, and it is cultivated as a weed in the Nile Valley and the Mediterranean Valley. Any other species is considered a weed. When the time came for the classification of the species, the researchers found that differences in the color of the bloom, the shape of the leaflets, the characteristics of the bulb, and the presence or absence of the stem were significant markers. All of the information pertaining to each taxon, including its history, local and international distribution, current names, exemplars, nicknames, and original specimens, is recorded. Every species has been provided with photos as well as a diagnostic key with the purpose of making identification simpler.

Gopi Krishnan, Murugesh 2021 [68]: In the present study, the antioxidant capabilities of the methanolic leaf extract of O. latifolia were investigated to determine whether or not they had the capability to kill eggs and cells. Hydroxyl radicals (OH-) are used in the process of analyzing antioxidants. The cytotoxic capability of colon (HT-29) cells was investigated by the researchers using these cells. We employed Culex quinquefasciatus larvae when they were in the IV instar so that we could evaluate the effectiveness of the test. Both of these compounds have IC50 values that are rather intriguing: 442.94 g/mL for antioxidant activity and 50.00 g/mL for HT-29 cytotoxicity activity. Both of these values describe the compounds' respective activities.

In 2019, Krishnan et al. [69]: Because of its many chemical activities, the Oxalis latifolia Kunth species, which is native to India and belongs to the family Oxalidaceae, is considered to be one of the most useful medicinal plants. A typical phytochemical examination was conducted on Oxalis latifolia Kunth as the topic of consideration. Polyphenols, glycosides, flavonoids, alkaloids, protein, saponins, and tannins were found to be present; the study also confirmed the existence of alkaloids. The Folin AlCl3 method was used Toascertain the total flavonoid and phenol concentrations that were present in the methanolic extract. Bacillus subtilis, Salmonella typhi, Aspergillus niger, Escherichia coli, and Acinetobacter fumigatus were the microbes that were investigated for their ability to withstand antibiotics. The capacity of Oxalis latifolia Kunth to decrease DPPH was a metric that was used to evaluate the effectiveness of the plant in removing free radicals.

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Subramanian A 2019 [70]: Defending against free radicals, which have the potential to cause illness and neurological diseases (NDD), is the role that antioxidants play. Due to the fact that they are both safe and beneficial to one's health, "natural antioxidants" that are produced from medicinal plants are finding themselves the focus of an increasing number of studies. The purpose of the in vitro antioxidant activity experiments that we carried out was to ascertain whether or not the compounds derived from Oxalis latifolia Kunth were effective in neutralizing free radicals. The DPPH radical and Nitric oxide scavenge test, which has ascorbic acid as its starting point, was used in order to assess the antioxidant activity of the samples.

3. Aim And Objectives

Diabetes is a chronic disease that occurs when insulin is either not created or utilized appropriately. Diabetes is a consequence of either event. A gland known as the pancreas is responsible for the production of glucose. Insulin makes it easier for glucose to enter cells from meals. Once inside, glucose is transformed into the energy that is necessary for the contraction of muscles and tissues that are being contracted. Several countries, including Nepal, Pakistan, Bangladesh, and India, are experiencing a concerningly high incidence of diabetes mellitus. These countries include both developed and developing nations.

The term "peptic ulcer" refers to sores or holes that develop in the lining of the digestive system. These ulcers are caused by the digestive enzymes pepsin and acid attacking proteins in the digestive tract. Patients who are suffering from peptic ulcer disease often have irregular or round forms.

Additional symptoms such as watery stools, steatorrhea, nausea, vomiting, and stomach pain, diarrhea is often defined by the presence of more than two stools weighing more than 200 grams each on a daily basis.

One of the benefits of herbal treatments is that they advocate for the use of herbs as a way of both treating and preventing sickness. According to the available scientific data, conventional herbal therapies for conditions such as diabetes mellitus, poison ivy, diarrhea, and other diseases have not been well substantiated. Research has shown that the leaves of Alocasia fornicata, the roots of Dioscorea oppositifolia, and the complete herb of Oxalis latifolia are more efficient in treating a wide range of ailments and disorders, such as ulcers, diabetes, and diarrhea. Regrettably, the majority of people's viewpoints are not backed by a significant amount of study in the fields of composition, review, and pharmacology.

Evidently, this piqued the interest of the researchers, and the objective of this study is to develop and evaluate treatments for the following conditions that are found in Wistar: diabetes caused by streptozocin and alloxan, ulcers caused by pylorus ligation and indomethacin, and the entire herb of Oxalis latifolia and Alocasia fornicata.

Aim:

Herbal plant formulation and evaluation for the treatment of diabetes, ulcers, and diarrhea is the focus of the present investigation.

Objectives:

Tobenefit from the medicinal qualities of the Oxalis latifolia plant, Dioscorea oppositifolia root, and Alocasia fornicata leaf, they should be investigated.

For the purpose of preparing plant samples for study under a microscope by grinding them and letting them to dry naturally in the air.

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Oxalis latifolia, Alocasia fornicata, and Dioscorea oppositifolia are three plants that have leaves that are used in the production of a variety of merchandise.

Phytochemical examinations were performed on the leaves of Alocasia fornicata, the whole plants of Oxalis latifolia, and the roots of Dioscorea oppositifolia.

Select the extract that has the greatest concentration of phytochemicals for the purpose of doing more study.

Every part of the Oxalis latifolia plant, the roots of the Dioscorea oppositifolia plant, and the leaves of the Alocasia fornicata plant were disassembled and stored in independent containers.

Putting together a formula for a purified chemical that is obtained from plant components and putting it through a series of tests to assess how effective it is.

Perform a comprehensive analysis of the chemical combinations that were removed to determine their acute toxicity in line with OECD standard 423.

It is necessary to do an analysis of the drugs stated above.

For the purpose of determining whether or not the roots of Dioscorea oppositifolia are effective in preventing diabetes caused by streptozocin and alloxan, we make use of stress indicators (GSH and CAT) and serum blood glucose levels.

There are a number of indications that may be used to determine the anti-diarrhea advantages of Alocasia Fornicata leaves on gastroenterospooling- and castor oil-induced diarrhea. These indicators include intestinal mass, small intestine transit time, total feces volume, and diarrheal feces volume levels.

The whole herb Oxalis latifolia has the potential to help in the healing of ulcers. This can be accomplished by the monitoring of the volume, pH, free and total acidity of the stomach, the closure of the pylorus, and the indomethacin-induced ulceration approach.

4. MATERIALS & METHODS

Animals:-

The Albino Wistar rats weighing between 180 and 210 grams were chosen from the animal house at St. John's College of Pharmaceutical Sciences in Yemmiganur. The rats were taken from a male individual who was in excellent health and of legal age. The animals were housed in cages that had a temperature of 24 degrees Celsius with a standard deviation of three degrees, and the light and dark cycles occurred every twelve hours. Furthermore, the animals were provided with unrestricted access to water, getting constant basic nourishment each day. All of the methods that were associated with this study were examined and approved by the Institutional Animal Ethics Committee (Approval number: IAEC/SJCPS/2019/02).

Drugs & Chemicals:-

Drugs: - A gift sample of streptozotocin (STZ) was acquired from Ranbaxy, Indomethacin from Cipla Pvt. Ltd., and castor oil from the Chitvel market.

Chemicals:-These are the components that were provided by Himedia: n-butanol, phosphate buffer, phenazine, metasulfate, nitrobluetetrazonium, NADH, glacial acetic acid, phenazine, dimethyl sulfoxide, and glacial acetic acid. I found that the phosphate buffered seawater (PBS) that Sigma

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Aldrich provided to be of great assistance. For the purpose of cell culture, Sigma Aldrich was the supplier of both the DMEM-High Glucose and the D-PBS that was used. America: St. Louis. Toget the pet ether, ethyl acetate, chloroform, and methanol that were used in the inquiry, the researchers reached out to Tharun Scientifics, which is located in Kadapa, Andhra Pradesh.

Equipment:- The necessary equipment consists of a digital scale, a tissue homogenizer, a UV/visible spectrophotometer, a laboratory cooling centrifuge, a T25 flask, 1.5 ml and 50 ml centrifuge tubes, 10 ml serological pipettes, 10 to 1000 µl tips from TORSON, an adjustable multichannel pipettor and a pipettor from Benchtop, USA, and an incubator from Heil Force, China, with a temperature of 37 degrees Celsius and a CO2 concentration of 5%. A load and an auto analyzer are integral components of a trinocular lens.

Features based on morphology: As seen in Figure 1, cinnamon vines have the potential to reach a height of sixteen feet by climbing their way up trees and other plants. This vine is a deciduous one, meaning that it grows year after year. In spite of the fact that it originated in India, it is often described to as a "Chinese Yam." The branches are entangled with one another in a manner that is right-to-left. There is a wide range of leaf lengths, and the bases of the leaves give the appearance of hearts. The stalk's leaves may be arranged in a row or in a spiral, depending on your preference. According to the data shown in Figure 4.2, the breadth of the leaves ranges from 1.5 to 3 inches, and their length also falls within this range. A sophisticated look may be achieved with seven or nine lines. Their roots, the stalks of their leaves, and the edges all have a hint of purple running through them. The small yellow-white blooms may be found in the spaces that are between the leaves of the plant. Bell-shaped male flowers may be found in a panicle or spike at the very top of a stalk, or they can be borne individually. Both of these arrangements are possible. The perfume of some flowers is similar to that of cinnamon, and they also have a spicy scent. An increase or a concern might be in the works for the future. As you look through the crevices between the leaves, you could see bulgels, which are essentially little aerial roots [Fig. 4.3]. Two-sided membrane packing is used to move the seeds from one location to another.

Fig 1: ***The whole plant of D.oppositifolia***

Fig2:***Leaves of D.oppositifolia***

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Fig 3: *D.oppositifolia* tubers

Traditional uses:

Tubers are occasionally used in the treatment of plant-based ailments. One of the numerous advantages it offers is an improvement in the function of the kidneys, lungs, stomach, and spleen. A number of patients who suffer from conditions such as diabetes, dry coughs, asthma, low appetite, frequent urination, mental instability, and recurrent diarrhea have reported seeing alleviation from the tuber. Ulcers, boils, and abscesses may all be alleviated by applying the tuber to the affected area of the skin. The presence of allantoin, which is a cell-proliferant, contributes to the healing process that occurs inside the body. One of the medicinal applications of this plant is the preparation of aqueous solutions from its leaves for the treatment of scorpion stings and snake bites. Additionally, the seeds of this plant include diosgenin, which is a component that is used in a variety of steroid treatments. The calming effects of this substance have been proven to be helpful for those who suffer from asthma and arthritis. Additionally, it has a long history of use as a method of birth control and as a therapy for various ailments related to the genitourinary system is the number in question.

The use of rhizome juice may be able to reduce the symptoms associated with menopause. When your menstrual cycle starts earlier than usual, drink the tuber tea. assisting with weight reduction and preventing women from getting pregnant, the root is used in the preparation of a beneficial tea . With the intention of maintaining her vigor, the lady may choose to have the roasted root as a snack after she has given birth. To satisfy someone's hunger, all you need to do is consume some root that has been prepared . The use of D. oppositifolia as a cleaner for wounds and sores dates back a significant amount of time. It is recommended that you consume the root if you have toothaches or chronic bad breath. It is possible to utilize the whole plant as a treatment for eczema and SARS.

5. Results

Results of Dioscorea oppositifolia

Macroscopy of Dioscorea oppositifolia

Leaves alternative in basal stem, differing above middle, seldom 3 in a whorl, on long petioles, simple, entire margin, broad ovate-triangular, with cordate base & acuminate apex, 7–9 nerved 3–9 cm long, 2–7 cm wide. Macroscopical character such as odour, colour, taste and shape of *Dioscorea oppositifolia* L. *(Dioscoreaceae)* leaf and tubers have been described in Table 4 and Fig 5 to 6.

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TABLE 1: Macroscopical character of *Dioscorea oppositifolia* L. *(Dioscoreaceae)* leaf and tubers

Character	Leaves	Tubers
Colour	Green	Brown
Odour	Odour less	Odour less
Taste	Taste less	Taste less
Shape	Heart shape	Cylindrical

Fig 4: Whole plant of *D. oppositifolia*

Fig 5: Leaves of *D. oppositifolia*

Fig 6 : Tubers of *D. oppositifolia*

Microscopy of Dioscorea oppositifolia Leaf

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A prominent midrib may be seen that is located in the middle of the dorsiventral leaf. A depiction of a midrib-cross section of the leaf may be seen in Figure 5.4. On the rear side, it is soft, but on the front side, it is challenging. The top and bottom of the leaf are both covered with a thin epidermis that is cylindrical in shape. The epidermis is surrounded by a thick layer, and the cells that make up this layer are packed closely together. Collenchymatous ground tissue that is two or three layers thick is known as the substratum, which lies underneath the epidermis. Located above the basal layer of the epidermis are four lateral vascular bundles on each side, as well as one big vascular bundle in the middle of the epidermis. Veins, lignified fibers, and xylem tissue are the components of xylem, as seen in Figures 5.5 and 5.6. Xylem tissue is also included in this category.

Conclusion

Every piece of information that we have gathered up to this point leads us to assume that the direct compression method, which was used in the production of the plant tablets and capsules, was successful. The results of the tests were used to identify the order of efficacy for treating diabetes, diarrhea, and ulcers. The findings suggested that the most successful treatments were β-sitosterol capsules, stigmasterol pills, and Latifolia A capsules. Methanolic extracts of DO, AF, and OL that are complementary to one another have been compared with each various combination. In spite of the fact that they were less potent than the single medicine, they nonetheless managed to generate favorable results. The efficacy of the three items, namely β-sitosterol capsules, stigmasterol pills, and Latifolia A capsules, was seen to be in the following order: diarrhea, diabetes, and ulcers.

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