PHYTOCHEMICAL SCREENING, TROMBOLYTIC AND ANTIDIARRHEAL ACTIVITY EVALUATION OF METHANOL EXTRACT OF CORIANDRUM SATIVUM SEEDS

(This report presented in partial fulfillment of the requirements for the degree of Bachelor of Pharmacy)

Submitted To

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Date of Submission: 26-04-24

Approval

The Daffodil International University Department of Pharmacy has accepted this project, **"Phytochemical Screening, Thrombolytic and Antidiarrheal activity Studies on Seeds Extract of Corianderum Sativum,"** as satisfactory partial fulfillment of the requirements for the bachelor's degree in pharmacy. Its style and content have also been approved.

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Certificate

I consequently officially declare that, under the guidance of an honorable Lecturer in the pharmacy department of Daffodil International University, I have finished this project report and partially met the requirements for the degree of Bachelor of Pharmacy. I thus attest that all of the work on this project is completely original. Furthermore, I affirm that this project work is original and hasn't been submitted in its whole for consideration toward a prior university degree or certificate.

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Acknowledgment

I am thankful to Allah the Almighty for bestowing upon me the strength, endurance, and ability to complete this energy research.

Throughout the duration of my project work and the preparation of this dissertation, I would like to extend my sincere gratitude, best wishes, and deep appreciation to my esteemed supervisor, **Galib Muhammad Abrar Ishtiaque**, Lecturer, Department of Pharmacy Daffodil International University, for his astute, overwhelming support, and competent, valuable suggestions and surveillance.

Allow me to express my gratitude to professor and the Head of the Pharmacy Department of Daffodil International University.

With immense pleasure, I also offer my gratitude to all of my esteemed instructors at Daffodil International University's Department of Pharmacy for giving of their precious time, imparting information, offering counsel, and being a supportive friend. Sincere gratitude to my family. Without my family's unwavering love, support, and guidance, I could not have progressed to this point in my life.

Dedication

I dedicate this work to Allah the Almighty before anything else, then to my instructors, friends, and family.

ABSTRACT

For many years, natural products derived from plants have been used to sustain human health. The hunt for natural remedies has increased recently. The antidiarrheal, thrombolytic, and phytochemical screening qualities of the methanol extract from Coriandrum sativum seeds were examined in this work. Testing with phytochemicals revealed the presence of carbohydrates, Glycosides, Alkaloids, Tannin, Gums and Phytosterols.
There were thrombolytic activity applied to Coriandrum sativum seeds. Standard streptokinase (SK) was used to compare the results of the assessment of thrombolytic activity conducted on human blood samples. The study found that the MSF (methanol soluble fraction) had the highest percentage of thrombolytic activity 55.77%.

The use of herbal drugs in the treatment of diarrhea is a common practice in many countries. The antidiarrheal activity in mice at two distinct doses was evaluated using the castor oil-induced diarrhea method. anti-diarrheal activity (39.11% and 73.92% decrease in diarrhea at 250 mg/kg and 500 mg/kg) in comparison to the usual 70.01%loperamide value.

Key words: Coriandrum sativum, antidiarrheal, thrombolytic, and phytochemical screening.

Contents

CHAPTER- 1

INTRODUCTION

1.1 General Introduction

The natural world is a fantastic source of knowledge and has all the answers to human issues. Plants, in particular, were the primary source of innovative medications in the past and still provide the majority of medication used today. Plant-derived medicines used to treat human ailments have come under increasing scrutiny in recent decades, with a rising acknowledgment of the importance of botanical, chemical, and pharmacological analyses.

Plants are used for many different purposes. Natural product history began when early man started to notice his surroundings, which is a relatively short period of time. It is said that for the better part of his two or three million years on Earth, cultured and civilized man has fought for survival. Over a century of research has yielded a key to identify which plants are harmful but also valuable. Every civilization since then has used herbs as a primary source of medicine. (Baquar, 1995). Clinical microbiologists are interested in antimicrobial plant extracts for two reasons. First off, it's quite likely that some of these phytochemicals—which are already being tested on humans—will find their way into the prescription drugs that physicians use as antimicrobials (see below). Reportedly, each year two or three novel antibiotics derived from newly discovered microorganisms are developed (Clark, 1996). The pace has picked back up following a recent pause, since scientists have discovered that the effective life span of any antibiotic is limited. Global spending on the creation of innovative anti-infective medications, including vaccines, is expected to increase by 60% from 1993 levels (J, 1998). Furthermore, novel sources—especially those derived from plants—are being investigated.

Second, people are becoming more aware of the issues surrounding the overuse and over prescription of traditional antibiotics. Another thing that many people want is more control over their medical care. A vast array of plant components, occasionally of dubious purity, are widely used for self-medication and are readily available over-the-counter from herbal vendors and natural food stores. The use of plant extracts in conjunction with other complementary therapies became more and more popular in the late 1990s. A survey conducted previous to this decade revealed that more than one-third of Americans had at least one "unconventional" therapy attempt in the year before (David M. Eisenberg, 1993). Sales of herbal treatments increased by 37% in 1996 over 1995 according to reports (B, 1997). It is hypothesized that Americans are reacting to the over prescription of sometimes dangerous pharmaceuticals in a similar fashion to how their predecessors from the 19th century (see below) handled the abuse of calomel, bleeding, and purging (A, 1997).

1.2 Status of medicinal plants in Bangladesh

Plant diversity is very high in Bangladesh, a country on the Indian subcontinent. Four hundred and fifty-nine of the approximately two thousand medicinal plants found on this subcontinent are registered in Bangladesh (Ghani 1998). Historically, kavirajes have used several common medical herbs as traditional medicines, while it is unclear how many specific plants were used. Several tribes with unique customs, such the Chakma, Marma, Rakhain, Tipra, Garo, and Khashia, have also increased the use of therapeutic herbs. This old-fashioned approach to healing has managed to endure despite the widespread adoption of modern medical systems thanks to people's faith in mother nature. That is to say, the expertise of using medicinal herbs has been passed down from father to son (Pavel P, 2007).

1.3 Medicinal Plants in World Market

The biggest international markets for MAPs are China, France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States. Japan consumes more botanical medicines per person than any other country in the world. (Laird, 1999). In 2001 and 2002, the International Council for Medicinal and Aromatic Plants projects 8–10% annual global increase. (Srivastava (2000). At US$19.4 billion in 1999, the market for herbal remedies was estimated to be dominated by Europe (US$6.7 billion), Asia (US$5.1 billion), North America (US$4.0 billion), Japan (US$2.2 billion), and the rest of the world (US$1.4 billion). (Laird, S. A. (2002)). Both processed and raw plant-based medications are major exports from India. India exported essential oils valued at $13,250 million and crude pharmaceuticals at $53,219 million in 1994–1995. China was predicted to sell $5 billion worth of items using botanical medicine in total in 1995. (Lambert, 1997)

1.4 Importance of medicinal plants

Therapeutic plants are used by the culinary, cosmetic, pharmaceutical, and agricultural industries. The history of every society demonstrates the use of medicinal plants to treat disease. Presumably, prehistoric man was not aware of the health hazards associated with nonsensical therapy. The active compounds found in plants are what give herbs their therapeutic qualities, as research into medicine has shown. Before the era of synthetics, man's sole means of treating and preventing illness was medicinal plants. As scientific methods advanced, the researchers were able to understand the toxic principles included in the green vegetation. The scientists separated and analyzed some of the active components found in the medicinal plants and found them to be therapeutically active. Substances that are frequently used include nicotine, lobeline, aconitine, digoxin, atropine, strychnine, and morphine. The human race has had access to a vast array of potent medications from medicinal plants that have the potential to treat or completely eradicate a variety of diseases and maladies, even in the face of advances in synthetic pharmaceuticals.

Still useful now, nevertheless, are a few of these medications. Globally, the use of plant-based medicines is growing in popularity. (KKP, 1995). Despite the advances in modern (synthetic) medicine, there are still numerous infections and illnesses (diseases) for which there are no reliable therapies. For the sake of both people and the environment, safer drug research is now critically needed to treat conditions like diabetes, liver disease, gastrointestinal illnesses, and inflammatory disorders. Current studies on plants or herbal treatments have led to major advancements in the pharmacological assessment of many plants used in traditional medical systems. Therefore, it can be said that plants are an important source of medicinal compounds that can be used as both basic medications for the general public and distinct active chemicals that need to be taken in regimented dose forms. Modern pharmaceuticals and herbal medicines are complementary in healthcare systems in many developing countries, particularly those in Africa, Asia, and portions of Europe. Plant goods are widely available worldwide due to the variable outcomes of using herbal plants and the belief that many herbal therapies don't harm people or the environment. (M. Angell, 1998) (PA, 1995).

1.5 Significant and Rationale properties of medicinal plant

Plants have been utilized as medicine for illnesses from the dawn of human history. The identification of medicinal plants' therapeutic properties has been considerably aided by widespread use and observations of their efficacy, even though the precise chemical composition of these plants is not always known. For example, senna alatae has long been used to treat bacterial and fungal illnesses. Additionally, they displayed varying degrees of antifungal and antibacterial activities that oppose pathogens. According to research, flavonoids have stronger antifungal and antibacterial qualities against some harmful fungi and bacteria that infect people. (James Owoyale, 2005) A medicinal plant's ability to treat illness is attributed to the presence of specific bioactive ingredients. These advantageous components are found using phytochemical screening methods such as thin-layer chromatography and phytochemical tests. (SP, 2010). Terpernoids, alkaloids, flavonoids, tannins, and other secondary metabolites or compounds influence the antibacterial activity and overall therapeutic efficacy of medicinal plants. (Evans WC, 2002). Additionally, it has been demonstrated that similar phytochemical elements, such tannins and flavonoids, are beneficial against pathogenic bacteria like Bacillus cereus and Staphylococcus aurous. (Kumar A, 2008).

Tannins, found in medicinal plants, are important ingredients in antibacterial soap, which is widely used for bathing and cleaning skin. Phytochemicals have been demonstrated in the literature to be poisonous to bacteria, yeasts, and filamentous fungi, as well as to inhibit viral reverse transcriptase (WC, 2002). Saponins have been identified as a major constituent acting as a secondary metabolite with antifungal properties. Since tannins, phenols, steroids, and saponins have been found to have a variety of physiological functions, it is possible that these substances are responsible for the antibacterial impact. (FC, 2004)

1.6 Thrombolytic agent

An anticoagulant that can dissolve a thrombus and clear an artery or vein. Treatment for pulmonary embolism, heart attacks, strokes, and obstructions of peripheral arteries or indwelling catheters is suggested for thrombolytic medications.

For example: streptokinase and S-kinase.

1.7 Phytochemical Basis

Chemical substances produced by all plants aid in their evolutionary process. Plants produce substances like salicylic acid, which they use as hormones to protect themselves from herbivores. Should scientific verification be obtained, the content and proven pharmacological action of these phytochemicals found in therapeutic plants provide as justification for their potential use as medications in modern medicine. One family of alkaloids found in daffodils (Narcissus) is galantamine, which has been licensed for use as an Alzheimer's disease therapy. The bitter-tasting, toxic alkaloids may also provide protection against parasites since they are concentrated in plant parts like the stem that herbivores are most likely to eat. (Bastada, José, 1. 2006).

1.8 Antidiarrheal activity

According to Ezekwesili et al. (2004), the symptoms of diarrhea include wet stool, increased frequency of bowel movements, and abdominal pain. It is one of the primary causes of malnutrition and child mortality in today's underdeveloped countries. For diarrhea, two suitable therapeutic interventions are oral rehydration therapy and chemotherapy. Due in large part to the efforts of medicinal plants, research on substances with anti-diarrheal characteristics has progressed and developed. As part of its Diarrheal Disease Control Program, the World Health Organization (WHO) has given special consideration to the use of traditional folkloric medicine in the prevention and treatment of diarrhea. Herbal remedies with anti-diarrheal properties are used by traditional healers. However, the effectiveness of many of these anti-diarrhea remedies from antiquity has not been thoroughly investigated.

1.9 Plant profile

1.9.1 Plant Name

Scientific Name: Coriandrum sativum

1.9.2 Taxonomical Classification

Kingdom: Plantae

Order: Apiales

Family: Apiaceae

Genus: Coriandrum

Species: C. sativum

Binomial name: Coriandrum sativum L.

1.9.3 General Information

The coriander plant is a soft plant that reaches a height of 50 cm (20 in). The leaves exhibit a variation in morphology, with large lobed sections at the base of the plant and slender and feathery sections higher on the flowering stems. Dried coriander fruits are often called "coriander seeds". The diameter of seed is 3–5 mm. Large seeds contain low amount of volatile oil. On the other hand small seed contain volatile oil around 0.4-1.8% which is highly valued as a raw material for the preparation of essential oil. Coriander seeds are used as a spice in Indian curries such as garam masala. The powdered fruits are used in large quantities along with cumin to thicken a mixture known as dhania jeera. Coriander seeds are one of the key botanicals used to flavour gin. coriander essential oil to inhibit Gram-positive and Gram-negative bacteria, including Staphylococcus aureus, Enterococcus faecalis, Pseudomonas aeruginosa, and Escherichia coli.

1.10 Plant parts utilized in the study

FIGURE 1: Tree of Coriandrum sativum

FIGURE 2: Leaves of Coriandrum sativum

FIGURE 3: Ripe fruits of Coriandrum sativum

FIGURE 4: Flowers of Coriandrum sativum

FIGURE 5: Roots of Coriandrum sativum

CHAPTER: 2

OBJECTIVES OF THE STUDY

2.1 Purpose of the study

For the treatment of both newly identified diseases and pre-existing ones, different drugs are required. The growing resistance to synthetic drug dangers and commercial medication has led to an increase in interest in herbal remedies. Seeds of Coriandrum sativum were selected for research because of their possible therapeutic uses. This experiment was conducted to evaluate the thrombolytic and anti-diarrheal activities of the Coriandrum sativum seeds.

CHAPTER- 3

MATERIALS & METHODS

3.1 Seeds material

The seeds were collected from local market.

3.2 Drying and grinding

The seeds were identified from other foreign material and broken seeds. Then seeds were washed with water. After being washed, they were shadow sun dried for 1 to 2 days. A suitable grinder should be used to achieve a very close consistency with fine powder. The powder was then kept somewhere dry, cold, and hidden in an airtight container.

3.3 Preparation of the crude extract

In the Soxhlet apparatus, 300 milliliters of methanol and the sample powder were added. the four-day temperature and pressure setting. The extract was given four days to dry with a hair dryer. The extract was then precisely weighed after that.

3.4 Phytochemical Screening Methods

Identification of distinct phytoconstituent classes found in different plant sections is known as phytochemical screening. The substances found in plants naturally are known as phytochemicals. Phenol, flavonoids, alkaloids, terpenoids, saponins, and many more chemical elements are found in plants. Though nearly 50% of medications used in medicine are derived from plants, only a small percentage of plants with therapeutic potential have been researched. Due to this, a sizable amount of current study has focused on higher plants' phytochemical analyses that are linked to ethnobotanical knowledge. The phytochemicals are subsequently examined for various forms of biological activity after being isolated. (Mutual Ali, 1998)

3.4.1 Test Materials

Extract of seeds of Coriandrum sativum.

3.4.2 Reagents of chemical group tests

- Molisch reagent
- Dragendroff's Reagent
- ferric chloride
- Distilled water
- Molish Reagent Methanol
- Chloroform
- hydrochloric acid
- concentrated sulfuric acid
- sodium hydroxide

3.4.3 Detection of Carbohydrate

Two milliliters of the extract solution and two milliliters of concentrated sulfuric acid were added to the test tube. Afterward, 2–3 drops of Molisch reagent were applied. Carbs can be detected by the formation of a red or purple ring.

3.4.4 Detection of Glycosides

In a test tube, 1 ml of extract solution and 1 ml of water were added. After that, a few drops of sodium hydroxide (10%) were added. The appearance of yellow color signifies the existence of glycosides.

3.4.5 Detection of Alkaloids

To a test tube was added 2 ml of extract and 0.2 ml of diluted hydrochloric acid. A milliliter of Dragendroff's reagent was then added. The presence of alkaloids is indicated by the formation of orange-brown precipitate.

3.4.6 Detection of Tannins

A test tube containing 5 ml of extract solution was used. After that, add two to three drops of ferric chloride solution. The presence of tannins is shown by the formation of a greenish black precipitate.

3.4.7 Detection of Gum

Concentrated sulfuric acid and molish reagent were added to a test tube containing 5 milliliters of extract solution. The presence of gums is indicated by the formation of a reddish-violet ring at the intersection of the two liquids.

3.4.8 Detection of Phytosterols

A test tube containing 1 ml of chloroform and 2 ml of extract solution was used. After that, one milliliter of sulfuric acid was added. Presence of phytosterols is indicated by the formation of a golden red or golden yellow tint.

3.4.9 Detection of Flavonoids

In a test tube, 1 ml of the extract solution was added along with a few drops of concentrated hydrochloric acid. It does not generate a red color, which denotes the lack of flavonoids.

3.5 Thrombolytic Activity Test

3.5.1. Thrombolytic activity

One milliliter of venous blood was taken from healthy people who had never taken oral contraceptives or anticoagulant medication. The blood was then put to the pre-weighed micro centrifuge tubes and allowed to coagulate. Using streptokinase (SK) as the reference material, Daginawala (2006) used a method to assess all extractives for their thrombolytic activity. Ten milliliters of distilled water were used to incubate the extractive (100 mg) from seeds for the entire night. Then, the soluble supernatant was passed through a syringe filter with a 0.22-micron aperture.

Venous blood from healthy donors was divided into separate, sterile, pre-weighed microcentrifuge tubes (1 ml/tube), and the tubes were heated to 37° C for 45 minutes in order to facilitate clot lysis. Upon the formation of the clot, the serum was extracted without causing any damage to it, and the weight of every tube holding the clot was once more measured to ascertain the clot weight, which can be calculated as follows: (clot weight = weight of tube with clot – weight of tube alone). The institutional ethical review committee gave its ethical approval for the experiment, which was carried out in accordance with standards for safe animal care. A distinct 100µl water solution containing crude extract and various partitionists was added to each micro centrifuge tube containing the pre-weighed clot. Subsequently, the positive and negative control tubes were filled with 100µl of streptokinase and 100µl of distilled water, respectively. Every tube was incubated for 90 minutes at 37° C to check for clot disintegration. After incubation, the discharged fluid was collected, and tubes were weighed once more to determine whether the clot breakup had affected the weight. A percentage was calculated from the weight difference recorded before and during clot lysis, as shown below:

% of clot lysis = (clot weight after fluid release/clot weight) × 100.

FIGURE 5: Clotting blood after fluid release

3.5.2 Streptokinase (SK)

lyophilize accessible for acquisition Five milliliters of sterile distilled water were added to a bottle containing 15, 000, 000 IU of streptokinase from Popular Pharmaceuticals Ltd., and the mixture was carefully mixed. A stock of 100µl (30,000 IU) of this solution was used for in vitro thrombolytic studies.

3.5.3 Analysis of Statistical Data

Each experiment used three replicates of each sample for statistical analysis, and the findings are shown as mean ± SD.

3.6 Antidiarrheal Activity

3.6.1 Principle

Mice with castor oil-induced diarrhea were utilized to evaluate the anti-diarrheal effects of the Coriandrum sativum seed methanolic extract. This method involved giving each mouse 1 milliliter of ultra-pure analytical grade castor oil in order to induce diarrhea. Each mouse's feces excretion was recorded. By contrasting the experimental groups observations with those of the control group, the anti-diarrheal activity of the samples was evaluated.

3.6.2 Experimental animal

Four to five-week-old Swiss albino mice, of either sex, were used in the experiment. They were obtained from the International Centre for Diarrheal Diseases and Research, Bangladesh (ICDDR, B) Animal Resource Branch. Animals were kept in standard polypropylene enclosures and were subjected to a 12-hour light-dark cycle, with a controlled ambient temperature of 24 ± 2ºC and a relative humidity of 60–70%. In addition, B prepared mouse meal and they had unlimited access to water and ICDDR. These animals must spend at least three to four days on the test site before the experiment begins since they are extremely sensitive to changes in their environment. The moral rules around the use of animals in research were closely followed.

3.6.3 Experimental design

Four groups of three mice each were formed from a total of twelve experimental mice that were selected at random. A certain therapy was provided to each group. Prior to initiating any treatment, the test sample and control substance dosages were adjusted based on an exact weight measurement of each mouse.

3.6.4 Preparation of test materials

The exact weighted extracts were measured and triturated unidirectionally with a small quantity of Tween-80 (a suspending agent) to provide the mice 250 and 500 mg/kg body weight of the extract. After the extract and suspending agent were thoroughly combined, distilled water was added gradually. A final volume of 3.0 milliliters was achieved for the suspension. To stabilize the suspension, a vortex was used to fully mix the material.

FIGURE 6: Oral feeding of test sample to mice

3.6.5 Procedure

For this experiment, the technique from Shoba and Thomas (2001) was applied with a few minor modifications. The test, positive control, and control groups from the animals were each made up of three mice. The control group received the vehicle, 1% Tween 80 in distilled water, orally at a dose of 10 ml/kg. Oral loperamide (2 mg/kg) was administered to the positive control group. The test group received 250 mg/kg and 500 mg/kg body weight of methanolic extract of Coriandrum sativum seeds. Every animal had its own cage, and the floors were changed every hour. After the previously mentioned treatment, each mouse was given castor oil orally to induce diarrhea. During a four-hour observation period, the amount of diarrheal excrement that the animals threw out was recorded.

CHAPTER- 4

RESULT & DISCUSSION

4.1 RESULT

4.1.1 Phytochemical Screening

conclusions of the phytochemical screening of the methanol extract from Coriandrum sativum seeds.

Tested groups	**Result**
Carbohydrate	Positive
Glycosides	Positive
Alkaloids	Positive
Tanin	Positive
Gums	Positive
Phytosterols	Positive
Flavonoids	Negative

Table 1- Phytochemical test results of extract of Coriandrum sativum seeds.

NB: The presence of the tested group is shown by positive, and its absence is indicated by negative.

4.1.2 Result of Thrombolytic activity test:

Sample	Blank tube weight (gm)	1st clot + tube weight (gm)	1st clot weight (gm)	2nd clot+ tube weight (gm)	2nd clot weight (gm)	% Of Lysis
Standard (Streptokinase)	0.806	1.607	0.801	1.325	0.519	64.79%
Control (Distilled water)	0.814	1.745	0.931	1.256	0.442	47.48%
Coriandrum sativum seeds extract	0.833	1.815	0.982	1.380	0.547	55.70%

Table 2- Thrombolytic activity (in terms of % clot lysis) of Coriandrum sativum seeds

SK = Streptokinase (positive control),

ME= Methanol extract,

Blank= Distilled Water as negative control.

64.79% of the clots were dissolved after 90 minutes at 37 °C incubation with 100µl SK, a positive control containing 30,000 IU. However, distilled water was utilized as a negative control and revealed a low percentage of clot lysis (47.48%). It was shown that there was a statistically significant difference in the average percentage of clot lysis between the positive and negative controls. In this study, Coriandrum sativum seeds exhibited the finest thrombolytic activity (55.70%).

4.1.3 Result of anti-diarrheal activity

The following information was gathered after a castor oil-induced anti-diarrhea test was conducted on a methanolic extract of Coriandrum sativum seeds. Test materials utilized to assess the anti-diarrheal properties of Coriandrum sativum seeds methanolic extract.

Code no.	Test samples	Group	Identification	Dose (mg/kg) *
CTL	1% Tween-80 in distilled water	I	Control Group	0.1 ml/10 g of body wt.
STD	Loperamide	II	Standard Group	2
MESF 250	Methanolic extract of seeds Of Coriandrum sativum	IIIa	Test Sample	250
MESF 500	Methanolic extract of seeds Of Coriandrum sativum	IIIb	Test Sample	500

Table 3: Test materials used in the evaluation of anti-diarrheal activity of methanolic extract of seeds of Coriandrum sativum.

Code no.	**Mice no.**	**No. of diarrheal feces**				**Total no. of diarrheal feces**	**Average**	**% Reduction of Diarrhea**
		1 hour	**2 hours**	**3 hours**	**4 hours**			
CLT	1	5	3	2	0	10	7.67	
	2	0	4	2	0	6		
	3	3	1	2	1	7		
STD	1	2	1	0	0	3	2.33	70.01
	2	1	1	0	0	2		
	3	0	1	1	0	2		
MESF 250	1	3	0	2	1	6	4.67	39.11
	2	1	1	0	0	2		
	3	4	1	1	0	6		
MESF 500	1	0	1	1	0	2	2	73.92
	2	2	1	0	0	3		
	3	1	1	0	0	1		

Table 4: total no. of diarrheal feces stool given by each mouse

Group	P value	Statistical Significance
STD	0.0128	Extremely statistically significant
MESF 1	0.1699	Not enough significant
MESF 2	0.0131	statistically significant

Table 5- Effect of methanolic extract of seeds of Coriandrum sativum on castor oil (1ml/mice) induced diarrhea in mice.

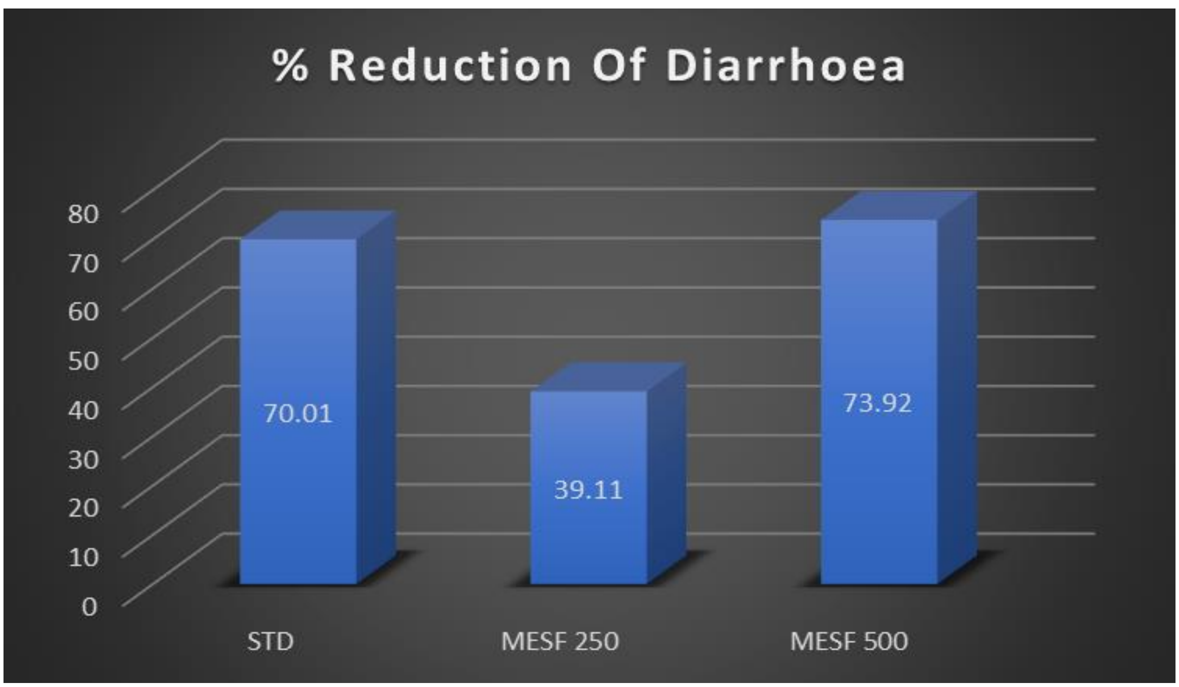

Figure 7- Anti-diarrheal effect of methanolic extract of seeds of Coriandrum sativum on castor oil (1ml/mice) induced diarrhea in mice

The rate of diarrhea reduction at 250 mg/kg of Coriandrum sativum seed methanolic extract is 39.11%, which is lower than the normal dosage of standard loperamide (70.01%). However, the rate of diarrhea reduction at 500 mg/kg of Coriandrum sativum seed methanolic extract is 73.92%, indicating very good anti-diarrheal activity.

The results of the study show that the methanolic extract of Coriandrum sativum seeds has statistically significant anti-diarrheal efficacy.

Chapter: 5

Conclusion

People have discovered that certain herbs and plants can improve food flavor in addition to improving health. Over the decades, coriander sativum has been used extensively for both traditional and culinary uses. While linalool has been shown to be the primary constituent of C. sativum extract, other important classes of phytochemicals that are thought to be responsible for the cardioprotective properties of coriander include numerous flavonoids, phenolic acids, and phytosterols.

Flowers, leaves, and roots of this plant are frequently used. The seeds are primarily used as a herb to enhance the flavor of curries. Its seed has medicinal effects as well. We are looking for these answers in our investigation.

This study showed that Methanolic extract of Coriandrum sativum seeds contain pharmacologically active substance with antidiarrhoeal and thrombolytic properties. The plant extract's effects were compared to those of loperamide, a well-known antidiarrheal drug, using the castor oil-induced antidiarrheal method, the gold standard in pharmacological studies. It shows very impactful result in anti diarrhoeal activity. On the other hand, this study examined the vascular domain and revealed a noteworthy thrombolytic activity in the extract that outperformed the efficacy of conventional streptokinase. This finding opens up new research directions by indicating that Coriandrum sativum seeds may include substances that have the ability to dissolve blood clots, which could have effects on thrombosis-related disorders and cardiovascular health.

Coriander sativum has the potential to be a medicinal tree, according to current research. Given the characteristics of the Coriander sativum plant, further study can be conducted to unlock this plant's potential.