



FORMULATION & EVALUATION OF AYUSH KWATH POWDER & TABLET USED AS AN IMMUNITY BOOSTER IN COVID-19

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Abstract: SARS-CoV-2 is a novel coronavirus that causes COVID-19. The first time the WHO learned about this new virus was on December 31, 2019, following reports of a number of instances of viral pneumonia in Wuhan, People's Republic of China. The Ministry of AYUSH has worked very hard during the COVID-19 pandemic to contain and stop the rapid spread of the corona virus infection through the use of AYUSH medications and preventive measures. For the purpose of promoting general health, the Ministry of AYUSH of the Government of India suggests "Ayush Kwath," also known as "Kada," which contains several medicinal herbs. One of the immune-boosting health drinks that the AYUSH ministry recommends is called AYUSH Kwath, and it contains Tulsi (*Ocimum sanctum*), Dalchini (*Cinnamomum zeylanicum*), Sunthi (*Zingiber officinale*), and Krishna Marich (*Piper nigrum*). As an age-old medical and cultural system, Ayurveda has inspired our kitchen, shaped our seasonal eating habits, and impacted the treatments we applied for common illnesses. Tulsi, Marich, Sunthi, and Dalchini are among the most widely used and readily accessible medications that may be found at home. Thus, Ayush Kwath appears to be useful in immuno-regulation for managing viral infections like COVID-19 because of its immune-modulatory, antiviral, anti-oxidant, anti-inflammatory, anti-platelet, anti-atherosclerotic, hepato-protective, and reno-protective qualities. Physical examinations, physiochemical parameters, phytochemical tests, and the use of AYUSH kwath powder are all advised by this study.

Index Terms – AYUSH Kwath Powder and tablet, Health Drink, COVID 19.

I. INTRODUCTION

Numerous pathogenic microorganisms, such as bacteria, fungi, viruses, protozoa, and helminths, are present in the human body and can cause various forms of tissue destruction. Viruses stand out among these five groups of infectious organisms due to their special capacity to influence the host cell's machinery and their continuous development for survival and viability in all species. [1],

Following the December 31, 2019, reports of a wave of viral pneumonia infections in Wuhan, people's The SARS-CoV-2 coronavirus is a new coronavirus that causes COVID-19. The first organization to learn about this new Republic of China was the WHO. [2]

Since it first appeared in China in December 2019, a novel coronavirus disease has spread rapidly throughout the country, sparking a global outbreak and creating grave worries for public health. The news came from the World Health Organization (WHO). On January 27, 2020, the Kerala district reported the first case of COVID-19 in India. This led to the designation of COVID-19 as a worldwide public health emergency on January 30, 2020. Since then,

case reporting using the rapid antigen test (RAT) or the reverse technique of real-time transcription polymerase chain reaction (RT-qPCR) has undergone substantial modifications.[3]

The "Corona Virus" is the name given to the pandemic novel coronavirus, which belongs to the family of viruses that infects birds and mammals alike. SARSCoV-2's near RNA similarity led to the publication of "Disease 2019" (2019-nCoV) by the World Health Organization (WHO) in Geneva, Switzerland. It belongs to the Orthocoronavirinae subfamily of the kingdom Riboviria, the order Nidovirales, and the family Coronaviridae. [4]

Because it's a novel strain of the virus, medications and vaccines are still being researched; consequently, regulatory agencies have not yet recommended any effective treatments or vaccinations. Not only is there no vaccination to prevent the Corona virus, but there are no effective antiviral drugs too. Research has indicated that these viruses have the ability to generate drug-resistant mutants and reduce the effectiveness of currently prescribed medications. As a result, these infections might endanger humanity in the long run. [5] Numerous natural products have immune-boosting properties that could revolutionize COVID-19 management and prevention.[6] The Indian government has recommended using "Ayush Kwath" in this context to boost immunity. Science must independently validate this novel formulation. We made an effort to go over the immunological pathogenesis of COVID-19 and the importance of each of the previously listed herbs. [6]

1. Immunopathogenesis of COVID-19

Coronaviruses are viruses in an envelope that are surrounded by single-stranded positive sense RNA. The spike (S) protein on the surface of SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2) receptor on the host cell to enable the virus to enter the cell after being activated by the host serine protease TMPRSS2. The structure of the receptor-binding domain (RBD) of protein S, which binds to the ACE2 receptor, is known. It is believed that the virus can be eliminated by an antibody that targets this RBD. Although the virus can target any cell that expresses ACE2, it can specifically target gastrointestinal epithelial cells and lung type 2 alveolar cells. Whether SARS-CoV-2 shows cytopathic effects (CPE) is unknown. It has been said that they are less active than grownups. It has been noted that, in contrast to adults, children's alveoli have a less robust cell-mediated immune response, which leads to them being asymptomatic in most situations.[7]

The pathogenesis can be divided in two stages: Non- severe and severe.

a) Non – severe stage

The virus enters the host cell through the airway epithelium after fusing with the membrane. The virus multiplies inside the host cell and spreads out to access the lower respiratory system and alveoli. Humoral immunity prevents viruses from infecting new cells, whereas cell-mediated immunity focuses on eradicating virus-infected cells., humoral immunity stops viruses from invading new cells. At this point, a robust immune system can assist stop the virus from spreading and lessen the severity of illnesses. [8]

b) Severe stage

Once the immune system has been compromised, the virus spreads and affects the alveoli and the bottom of the lungs. The virus attaches to several organs that have the pro-ACE2 receptor teen before it can pass through the alveoli and enter the bloodstream, resulting in viremia. Cell-mediated immunity strengthens during this phase and starts to generate chemokines (CCL2, CCL3, CCL5, CXCL8, CXCL9, CXCL10, etc.) and proinflammatory cytokines (IFN- α , IFN-g, IL-1B, IL-6, IL-12, IL-33, TNF-a, etc.), damaging several organs and generating a "cytokine storm." In this extreme level, we might need to suppress inflammation in order to see improvement. Anti-inflammatory interleukin (IL-10) and IL-6 receptor antagonist tocilizumab are believed to play a therapeutic effect in lessening the severity and mortality of COVID-19. The possibility of thrombotic episodes,interleukin (IL-10) is

supposed to have a therapeutic role in reducing the severity and mortality of COVID-19. The risk of thromboembolic events is also increased found to be associated with COVID-19, a prophylactic antithrombotic medication is recommended at this stage.[9]

2. Immunity system in Ayurveda

Agni's health determines one's strength, longevity, and vitality. According to Charaka, who used the term Vyadhikshamatwa, not all unwholesome diets are equally harmful, not all doshas are equally potent, and not all people are capable of fending off diseases. Even unwholesome (unhealthy) food does not always result in disease. This shows that the immune system of the body is very important in the emergence of disease. Swasthya is the name given to Dhatu's equilibrium state. If someone wants to be healthy, they should acquire good habits for their food, behavior, and activities.[10] Therefore, in Ayurveda, immunity can be viewed as Vyadhikshamatwa and Oja, depending on the Agni, Dosha, and Dhatu conditions. Diet, good sleep, and celibacy are the three components of Aahara, Swapna, and Brahmacharya, which support the life that gives rise to the body's strength, beauty, and development throughout life. There are three different forms of Bala (strength or immunity): congenital, time-affected, and acquired. Congenital conditions are those that arise naturally in the body and mind; time-affected conditions are caused by seasonal variations and age-related factors; and acquired conditions are brought about by the right use of nutrition and exercise. Chakrapanidatta, normal, pure blood enhances physical prowess, complexion, health and lifespan.[11]

Ayush kwath powder

In light of the need of immunity-boosting measures following the COVID-19 pandemic, the Indian Ministry of Ayush has taken fitness merchandising of the masses, suggests "ayush kudineer," "ayush kwath," or "ayush joshanda," which is made up of four therapeutic herbs table 1. The herbs like holy basil, cinnamon, ginger, black pepper are particularly available, on hand and widely used in the kitchen and are convenient to use to neighborhood health workers, local and even to all public that they can have cost-effective remedy with herbal home remedies.[12]

In an effort to promote public health, the Indian government's ministry of ayush suggests "ayush kwath," "ayush kudineer," or "ayush joshanda," which consists of four medicinal herbs.[13] Herbs such as holy basil, cinnamon, ginger, and black pepper are without difficulty affordable, This would be a beneficial resource in the advertising of immunity and minimize fitness center and pharmacy crowding through this pandemic (Kaushik S, Jangra G, Kundu V, Yadav JP, Kaushik S. Zingiber officinale, a ginger component, has Ingredients in ginger, Zingiber officinale, have antiviral properties against the Chikungunya virus. shape of public fitness measure will quicker or later recommend 'health for all humans beneath the slogan 'our health is in our private hands,' defending every individual responsible for their health by direct participation in it instead than focusing on mass transport of any medication. When humans migrate to make a living, this natural infusion can make sure sizeable get admission to fitness care. The WHO SEARO accepted a decision to revitalize major health care by way of using bettering health offerings to promote wellbeing for everyone, focusing on disease prevention and fitness advertising [14]. This ketogenic diet is essentially a resuscitation of traditional medical methods rather than a mechanical mixture created in reaction to the COVID-19 pandemic. The Ministry of Ayurveda and Ayurvedic Medicine proposed a mixture of the following medicinal plants. Ocimum tenuiflorum (Holy basil, Tulsi). [15]

II. OBJECTIVES

During COVID-19 pandemic period various pharmaceuticals companies were tried several antiviral medicines and vaccine but it has various side effects to minimize these side effects we thought to prepared the ayurvedic Ayush kwath powder and tablet by keeping in mind various ayurveda concept that the ayurvedic herb are seen to have rich sources and also have ability to fight against the Immunopathogenesis process of viral diseases which will be effective against covid-19.

III. Material and methods

Material

Powder of Tulsi, Cinnamon, Black Pepper and Ginger were purchased from ABBUMIA SHOP DAWAIWALE, located at SHOP NO.1, RESEIDENCY ROAD, SADAR BAZAR, NAGPUR-440001(OPPOSITE JAMMU KASHMIR BANK) and Sodium Lauryl Sulphate was purchase from www.ibuychemicals.com

Plant Profile

Tulsi

Anti-diabetic impact antioxidative capacity impacts on immunity antitumor characteristics effects of contraception larvicidal characteristic neuroprotective properties and the title of "the queen of herbs" perfectly describes tulsi. Tulsi is particularly used in Indian Hindu homes and Ayurvedic medicine. Investigators have looked into the tulsi plant's antifungal, antihistamine, antibacterial, stabilizing activity, radio- defending effect, wound restoration effect, anti-diabetic effect, antioxidant activity, immunologic effects, anticancer properties, contraceptive effects, larvicidal property, Neuro-protective effects, and various other things to do. [16]



Fig No.1: Tulsi Leaf

Cinnamon

Lattes and toast often contain cinnamon, which is made up of the inside bark that has dried of the shoots of coppiced cinnamomum zelyanicum trees, which belong to the Lamiaceae family. the spice cinnamon. For example, research has shown that crucial that essential oil and water- based extracts of cinnamon are effective against harmful bacteria, viruses, and a variety of tumor cell lines. Prior studies have suggested that cinnamon bark's main pharmacological properties, including its antibacterial, anti-inflammatory, antiviral, and anticancer effects, are derived from fundamental oils. [17]



Fig No.2: Cinnamon Bark

Black pepper

In the Piperaceae family, (*Piper nigrum*) is a perennial vine that climbs mountains and is frequently referred to as pepper. Its fruits are used to create a hot sauce. For a very long time, black pepper has been used as a natural flavoring and remedy for a variety of illnesses. Certain spices have antibacterial qualities that eradicate harmful microorganisms responsible for food spoilage, whereas other spices possess antioxidant qualities that lessen rancidity and hence enhance the nutritional worth of food items. [18]



Fig No.3: Black pepper

Ginger

One of the most often used natural ingredients is ginger (*Zingiber officinale*), which is used as a flavouring and a treatment for conditions such as dehydration, dysentery, indigestion, flatulence, diarrhoea, appetite loss, infections, coughs, and bronchitis. It belongs to the Zingiberaceae genus. The part of the plant most frequently used as seasoning is the rhizome. Ginger can be used in a variety of ways, including fresh, roasted, powdered, as an oil or juice. Numerous pharmacologic activities of ginger (*Zingiber Officinale*), ginger possesses anti-microbial properties that work against several bacteria, fungi, and nematodes. On a number of viruses, ginger has been shown to work best. As well as it has antioxidant and radioprotective properties. As a result, these and similar spices have therapeutic potential and are frequently used as ingredients in traditional Indian, Chinese, and other remedies. [19]



Fig No 4: Ginger rhizome

IV. Formulation procedure of powder

Take all the aspects in dry structure as per necessities laid down in Ayurvedic Pharmacopoeia and make coarse powder. Make sachets or tea bags each of 3 g of powder or 500 mg pill of aqueous extract, to be bump off like tea or warm drink with the resource of dissolving in 150 ml of boiled water, as quickly as or twice daily. Gud (Jaggery)/Draksha (Resins) and/or Lemon Juice can be delivered even as ingesting the formulation. [20]

Table no 1: Different Ingredients of Ayush Kwath Powder with Medicinal Uses.

Ingredients	Scientific Name	Part used	Chemical Constituent	Taste /Potency	Actions	Medicinal uses
Tulsi	Ocimum sanctum	Leaves	Volatile oil, Eugenol, Ascorbic acid,	Acrid/hot	Stimulant Expectorant Diophoretic	Cough, Diarrhoea asthama,fever.
Cinnamon	Cinnamomum Zeylanicum	Stem Park	Cinnamaldehyde, cuminaldehyde, Eugenol	Acrid/hot	Stimulant carminative	Cough, asthma, diarrhoea. gastric ulcer, abdominal pain
Ginger	Zingiber Officinale	Rhizome	Zingiberene, Zingiberol	Acrid/hot	Stimulant stomatic carminative	Fever, rhinitis, cough, headache, asthma, indigestion
Black pepper	Piper nigrum	Fruit	Piperine, Piperidine, Piperettine and Chavicine	Acrid/hot	Antipyretic stimulant carminative	Fever with rigor, cough, cold, tastelessness

Table no 2: Formulation of Ayush Kwath Powder

Composition	Quantity
Tulsi	44.5g
Dalchini	22.2g
Sunthi	20.2g
Maricha	11.1g

V. Quality Control test of Ayush Kwath Powder

Physical Studies such as organoleptic qualitative Parameters shows that it has light brown colour, strong odour, pleasant taste and texture as fine powder. [21]

Physicochemical Parameters of Ayush Kwath Powder

a) Determination of Loss on Drying

A sample of 2.0 gram of Ayush Kwath Powder was placed in a clean, dry and tarred silica crucible. The sample was placed in an incubator oven at 105°C for 5 hours. It was self-cooled, and then removed the next morning from the oven preventing finger contact with potential oils and re-weighed. The percentage of loss on drying was calculated comparing the raw sample with the dried drug.

Calculation: Loss on drying (%) = $\frac{\text{initial weight of sample} - \text{weight of sample after drying}}{\text{initial weight of sample}} \times 100$

b) Moisture Content

A sample of exactly 10.00 grams of Ayush Kwath Powder was placed into the clean, dry receptacle tarred silica crucible. The sample was placed in an oven at 105°C for 5 hours. It was then removed from the oven preventing contact with potential oils from fingers and re-weighed. The percentage of loss on drying was calculated comparing the raw sample with the dried drug. [22]

c) Total Ash value

It is used to discover out the inorganic materials from organic plant material. To calculate the complete ash, take 2 gm of powdered drug fabric and transfer it in silica crucible and now incinerate it in muffle furnace at 450°C up to white and the cool it in desiccator and weigh the complete ash on the basis of dried drug.

d) Acid insoluble ash value

It is used to find out the impurity which is insoluble in acid. To calculate the acid- insoluble ash add 25 ml of hydrochloric acid and boil for 5 min and transfer it to silica crucible and incinerate it in muffle furnace at 450°C and cool it in desiccator and again weigh the ash on the foundation of dried drug. [23]

e) Water Soluble Ash value

It is used to determine the earthy depend stays after incineration. To calculate the price of water-soluble ash, add 25ml of distilled water and boil for 5 min now, transfer it to ashless filter paper and put it in silica crucible incinerate it at 450°C till it converts into white completely, cool it in desiccator and weigh it on the groundwork of dried drug. [24]

f) Water Soluble Extractive value

To calculate the water-soluble extractive value, take 5gm of coarse powdered drug and switch it into a hundred ml of distilled water in stoppered conical flask for 24 hours after than filter it with filter paper than pipette out 25 ml of the extract solution. in china dish and warmth this dish up to evaporation dry this extract at 105°C weigh it on the basis of dried drug. [25] results are shown in table no.5.

g) Ayush Kwath Powder Dosage

You can have it once or twice daily. Take one teaspoon (3gm) Ayush Kwath Powder and infuse it in 150 ml of boiled water. Consume it like tea or a hot drink. You can add gud (jaggery) / draksha (raisins) and/ or lemon juice with it for sweetness.

h) Storage Information

Store at room temperature and keep it protected from moisture and direct sunlight. Secure the sachet tightly after every use.

VI. Ayush Kwath Powder Uses and Benefits

It is use as immunity promoter because it internally strengthens the immune system and guards against infection symptoms. It Provides Protection from infections Tulsi, Dalchini, Sunthi, and Krishna Marich are ingredients in this ayurvedic remedy which increase the immunity and also assist to reduce the symptoms of illnesses. This also functions as a kadha for viral fever. Ayurvedic Kadha for Cold and Coughs. Tulsi possesses antibacterial, antiviral, and antifungal characteristics as well as sunthi's anti-inflammatory and antioxidant qualities. This kadha serves as an Ayurvedic immunity booster for kids because it is enriched with the powder of these immune-boosting Ayurvedic herbs. Antioxidant qualities are also present in this kadha immune booster. Strong antioxidant dalchini aids in infection prevention and immune development. It is 100% Natural and Safe this ayurvedic immune booster is created with pure, ethically sourced ayurvedic herbs that are 100 percent natural and free of additives like sugar and preservatives. [26]

Precautions of Ayush kwath Powder

It is advised to consult a doctor before giving the product for consumption to a pregnant female and a child.

Advantages and Disadvantages of herbal powder

Most of the medicine are available in powder form and it becomes more convenient for them the doctor will prescribe a specific amount of medicine as needed patient. The smaller particle size of the powder causes the fastest absorption than other solid doses in the form of capsules, tablets and pills etc. The powder preparation is effective compared to other dosage forms. Patients who cannot swallow pill, tablet, capsule, etc. Can easily take powder water or any liquid.

Disadvantages of herbal powder

Medicines that degrade when exposed to atmospheric conditions are not suitable for dosing powder forms. Volatile drugs are unsuitable for dispensing in powder forms. It is very difficult to protect powders containing hygroscopic, fusible or aromatic materials from decomposition. [27]

INTRODUCTION OF TABLET

Introducing Ayush Kwath Tablet, a convenient and facile way to have kadha circadianly! Made utilizing the potent coalescence of four Ayurvedic herbs such as Tulsi, Cinnamon, Ginger and Ebony pepper, Ayush Kwath Tablet efficaciously amends immunity. All the ingredients in this kadha possesses anti-allergic and antiviral properties, hence they avail palliate symptoms associated with viral and bacterial infections.

Four commonly used Indian medical herbs—Tulsi (*Ocimum sanctum*), Dalchini (*Cinnamomum verum*), Sunthi (*Zingiber officinale*), and Krishna marich (*Piper nigrum*)—make up the AYUSH KWATH TABLETS, a prescription-strength immune booster. The only medication endorsed by the Ministry of AYUSH, AYUSH KWATH TABLETS, strengthens the body's immune system and aids in developing resistance to COVID-19 infection. [28]

Directions for use:

Take once or twice daily. One tablet to be dissolved by stirring in 150 ml of boiled water for consuming like tea or a sultry drink. Gud (jaggery)/Draksha (raisins) and/or lemon juice can be integrated while consuming the formulation.

Warning: keep out of the reach of children. If you are a pregnant, taking any other medicine you can consult healthcare professional before taking this tablet.

Storage conditions: Store in cool and dry place. Keep away from direct sunlight, moisture and keep the container closed. [29]

Table no 3: Formulation of Tablet

Each 500 mg tablet has following ingredients as mentioned below

Composition	Quantity
Tulsi	220.02 mg
Cinnamon	109.08 mg
Black Pepper	110.10 mg
Ginger	52.8 mg
Starch	2.58 mg
Talc	2 mg
Sodium Lauryl Sulphate	0.5 mg
Magnesium Stearate	1.52 mg

VII. METHOD OF PREPARATION OF TABLET

For making tablets, certain additives are also added to the medications. Tablets can be flat or biconvex and are typically round in form the molded or compressed solid dosage forms of powdered herbs, herbal extracts, or their ingredients.

The following steps are involved in the preparation of tablet

Weighing of ingredient

When using raw drugs, they must first be finely ground and sieved through a no. 100 mesh. The fine powder (or other medications) and other ingredients need to be precisely weighed using a high-quality balance. [30]

Mixing

Mixing is uniformly combined. In order of increasing weight, the ingredients should be combined. In order to create a homogenous mass from which uniform tablets can be produced, all of the medications and excipients.

Preparation of 1% Acacia Solution

1 gm of acacia powder was dissolved in 100 ml distilled water, stirrr continuously to form a jelly like appearance. [31]

The mixed ingredients can be converted into granules by the following method:

Wet granulation method:

The most popular approach is this one. In order to create a cohesive mass, weigh all the ingradient accurately, mix well and triturate using mortar and pestle the prepared 1% binding agent was added slowly to form a damp mass. The damp mass then transfer through a sieve no.10. The granules are dispersed across trays and heated to 60°C in a hot air oven to dry. The dried granules were passed through sieve number 20. After passing through sieve number 20, to avoid slug formation, the well dried granules are ready for compression.

Compression of granules into tablet

The one punch tablet machine was employed for preparation on a small scale. It can be operated manually or electrically. The tablet has following Organoleptic characters are Colour: Light Brown, Odour: slight pungent Taste: Pungent. [32]

VIII. Evaluation of tablet

Weight variation test:

Weigh 20 tablets individually and calculate the average weight. The individual weight was compared with the upper limit and lower limit. Not more than two of the tablets differ from the average weight by more than % error listed in the table as per Indian Pharmacopeia. Results are shown in table no.

Table no 4: Weight variation Parameters

Weight variation test as per I. P	% weight variation Acceptable
84 or less	(+ or -) 10%
84-250 mg	(+ or -) 7.5%
>250 mg	(+ or -) 5%

Thickness Test:

The test which is used to measure how thick the tablet is, known as the tablet thickness test. We measure the thickness of the tablets by taking some sample tablets to ensure that tablet thickness is within a specified range. The tablet thickness is measured in millimeters and the Vernier Caliper was used to measure tablet thickness, [33]. As per official standard tablet thickness is (\pm) 5%

Hardness Test:

Tablet hardness can serve as a guide for product development. The equipment used to test the hardness of the tablet is Monsanto Type Tablet Hardness tester. We placed the tablet in between the jaws of Monsanto Type Tablet Hardness Tester. After applying pressure, the tablet broke into pieces and the readings were noted.

Friability Test:

Tablet Friability is the physical condition that describes the tendency of tablets to break into smaller pieces or to detach a percentage of powder or powder loss from the tablet's outer surface under mechanical and physical stress. Friability of tablet can be determine in the laboratory by using Roche Friabilator, the friabilator consist of plastic chamber that rotate at 25 rpm, dropping the tablets through a distance of six inches in the friabilator, which is then operated for 100 revolution. The tablets are reweighed. Compress tablets loss less than 0.5% to 1.0 % of the tablet weight are considered acceptable. [34]

Friability Test formula

$$\text{Friability (\%)} = \frac{W_1 - W_2}{W_1} \times 100$$

Were,

W_1 = Weight of Tablets (Initial / Before Tumbling)

W_2 = Weight of Tablets (After Tumbling or friability)

Limit: Friability (%) = Not More Than 1.0 %

Disintegration Test:

The disintegration test is used to show how quickly the tablet breaks down into smaller particles, allowing for a greater surface area and availability of the drug when taken by a patient. Disintegration tests are however, useful for assessing the potential importance of formulation and process variables on the biopharmaceutical properties of the tablet, and as a control procedure to evaluate the quality reproducibility.

Test Procedure:

To carry out a disintegration test for tablets, we use a basket which holds 1 to 6 tablets. This is then raised and lowered into a beaker of water, which is used to simulate conditions in the stomach at 37°C. If the tablets or capsules float, perforated plastic disks are placed on the top of the tablets to keep them under the water level. The tablet disintegration time is taken when no residue is left in the mesh. Standard compressed tablet in I.P is 15 min [35]

IX. RESULT AND DISCUSSION

The formulation was prepared by wet granulation method and the physical parameter of compressed tablet were shown in table no 6.

Table no 5: Result of Physicochemical Parameter of herbal powder

Sr.no	Physicochemical Parameter	Percentage Limit (%)
1.	Loss on Drying	1.9 % w/w
2.	Moisture content	4.38% w/w
3.	Total Ash value	4.12 % w/w
4.	Acid insoluble ash	2.32% w/w
5.	Water soluble ash	1.12% w/w
6.	Water soluble extractive value	26.2% w/w

Table no 6: Tablet Evaluation parameters

Batch No.	Thickness (mm)	Hardness (kg/cm ²)	Weight variation	Friability (%)	Disintegration (min)
1	5.6	5.00	497±5%	1.44%	27
2	5.6	5.00	493±5%	0.81%	25
3	4.7	5.00	492±5%	0.81%	30
4	4.9	3.00	492±5%	1.43%	30
	3.6	2.00	498±5%	1.43%	30
6	3.6	3.00	502±5%	1.8%	27
7	5.1	5.00	501±5%	1.42%	28

Table no 7: Phytochemical screening Test:

Chemical constituents	Tulsi Extract	Dalchini Extrect	Sunthi Extract	Marich Extract
Carbohydrate	+	+	+	+
Protein	+	+	+	+
Amino acid	+	+	+	+
Steroid	+	+	+	+
Glycoside	+	+	+	+
Flavonoid	-	-	-	-
Alkaloid	+	+	+	+
Tannin	+	+	+	+



X. CONCLUSION

A thorough analysis of the AYUSH Kudineer components has been conducted, and the results of this study show that the compounds have antiviral action against a variety of viruses, notably respiratory viruses. They are also proven to have anti-inflammatory properties and function as efficient immunomodulators in various mechanisms. These ingredients are employed in the food business and in food preparation based on the evidence found in the literature, in scientific publications, and in traditional usage. Scientific data supports the use of AYUSH kwath/AYUSH Kudineer as a preventative, immune-boosting herbal health drink for the prevention of COVID 19. Ayush Kwath is a strong herbal cure that can help you stay well, especially if you're susceptible to illness. Ingredients in Ayush Kwath tablets have been used for ages to treat illnesses and increase immunity. This makes Ayush Kwath one of the most effective herbal treatments for boosting immunity.

XI. CONFLICT OF INTEREST

The authors declare no conflict of interest.

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