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FORMULATION AND EVOLUTION OF HERBAL CHYAVANPRASH FOR IMMUNITY BOOSTER

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Abstract:
Natural substitutes that can improve immunity and general well-being have emerged as a result of the increased interest in herbal preparations. A classic Ayurvedic remedy, chyavanprash is renowned for its immunomodulatory, antioxidant, and restorative qualities. In this study, a herbal chyavanprash made with traditional ingredients like Emblica officinalis (Amla), Withania somnifera (Ashwagandha), Piper longum (Pippali), Tinospora cordifolia (Guduchi), and other beneficial herbs high in vitamins, minerals, and bioactive compounds is formulated and evaluated. Herbal decoctions were prepared, ghee, honey, and sugar base were added, and then organoleptic, physicochemical, and microbiological characteristics were standardized as part of the formulation process.

The prepared chyavanprash demonstrated strong antioxidant capacity and stability, suggesting that it can function as a powerful immune-boosting agent. As a result, the study gives the traditional chyavanprash preparation a scientific viewpoint and validates its use as a secure and efficient polyherbal remedy for boosting immunity and fending off oxidative stress.

Keywords:Withania somnifera,Emblica officinalis ,*physicochemical,immunity booster,chyavanprash*

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INTRODUCTION:

Growing awareness of the negative effects of synthetic medications and the need for safe and efficient immunity boosters have led to a recent surge in demand for natural health supplements. A well-known and proven rejuvenator and health tonic among ancient Ayurvedic medicines is Chyavanprash. With *Emblica officinalis* (Amla) as its primary ingredient, it is a polyherbal formulation made with a blend of herbs, spices, minerals, ghee, honey, and a sugar base. Vitamin C and natural antioxidants, which are abundant in amla, are essential for boosting immunity and preventing oxidative stress [1]

One of the ancient Ayurvedic scriptures, the Charaka Samhita, originally classified chyavanprash as a rasayana (rejuvenative medication) that enhances memory, strength, longevity, and resistance to illness. *Withania somnifera* (Ashwagandha), *Tinospora cordifolia* (Guduchi), *Piper longum* (Pippali), and *Elettaria cardamomum* (Elaichi) are among the more than 40 medicinal plants included in the formulation. Each of these herbs has special therapeutic qualities. When combined, these components have adaptogenic, anti-aging, antioxidant, and immunomodulatory properties [2].

Chyavanprash has been shown in recent studies to strengthen respiratory function, improve digestion, increase immunity to infections, and improve general health. Essential micronutrients, flavonoids, tannins, saponins, and alkaloids are all provided by its polyherbal synergy, which also activates the body's defenses. Despite growing worries about lifestyle choices, recurring infections, and illnesses linked to stress, chyavanprash is still commonly taken as a daily dietary supplement to keep people healthy and energetic.

People have had access to a multitude of natural remedies and holistic approaches to health and wellness for thousands of years thanks to the ancient Indian traditional medical system known as Ayurveda. Among its many products, Chyawanprash stands out as a notable elixir that is widely recognized for enhancing general health and vitality. With its origins in Ayurvedic knowledge, chyavanprash is widely recognized and commended for its numerous health benefits. Chyavanprash is a highly prized combination of botanicals, minerals, and other natural elements that have been meticulously crafted to support general health and vitality in the Ayurvedic community. With roots in ancient Indian customs, chyavanprash has been used for many generations and is valued for its regeneration and restorative qualities [3].

This traditional Ayurvedic jam is well known for its many health benefits in addition to its delectable flavor. Amla (Emblica officinalis), the main ingredient of chyavanprash, is made by carefully combining fruits, spices, herbs, and other organic ingredients. A staple of Ayurvedic medicine, amla, sometimes called Indian gooseberry, is renowned for its abundant supply of vitamin C and strong antioxidant qualities. To complement Amla, a variety of herbs are well-balanced, such as shatavari (Asparagus racemosus), guduchi (Tinospora cordifolia), and ashwagandha (Withania somnifera). More than just a herbal blend, chyawanprash is a comprehensive approach to health that boosts vitality, digestion, and the immune system [4].

Its design showcases Ayurveda's extensive knowledge, which stresses the body, mind, and spirit's interconnectedness in achieving optimal health. Brown and semisolid, chyawanprash tastes both sweet and sour. More than fifty processed minerals, herbs, and spices are mixed in just the correct amounts to create a synergistic blend. Chyawanprash's effectiveness as a remedy. An essential part of the Indian diet since ancient times is chyawanprash, a tried-and-true Ayurvedic medicinal food. It is a potent combination of processed mineral and medicinal plant extracts with immune-boosting, rejuvenating, and antioxidant qualities. It is composed of the lexes "Chyawan" and "Prasha." Chyavanaprasha, chyavanaprash, chyavanaprasam, and chyawanaprash are some more names for it [4].

"Chyawan" is not just the name of a sage, but it also signifies "degenerative change." Prasha denotes a food or drug that is safe to consume. In actuality, CP is a comprehensive "metabolic" tonic used for both health maintenance and prevention. It is made up of several different herbs. Chyawanprash, an ancient Indian formulation (a polyherbal jam) supplemented with a range of herbs, herbal extracts, and processed minerals, is made according to a traditional Ayurvedic recipe. Many specialists believe that CP is an essential health supplement that has been used for thousands of years. Because of its many health benefits, chyawanprash has been used extensively since ancient times as a supplement and as a treatment to boost immunity and longevity [5].

Regardless of social, political, or scientific factors, Chyawanprash has been a part of every Indian's life since its inception. It was one of the foods most prized for its antiaging qualities long before vitamins, minerals, and antioxidant supplements were created. In Sanskrit, Chyawan and Prash both mean "loss" and "foodstuff," respectively. Sage Chyawan received a health-promoting, jam-like tonic known as Chyawanprash, or the diet of Sage

Chyawan, to help him regain his strength, vitality, energy, and youthfulness. Chyawanprash, a rich health supplement made of several herbs, herbal extracts, and processed minerals, has long been a mainstay of the Indian diet [3].

The health benefits of chyawanprash were recognized even before the minerals, vitamins, and antioxidants became well-known as dietary supplements. Chyawanprash, a complex health supplement made of several herbs, herbal extracts, and processed minerals, has long been a mainstay of the Indian diet. The health benefits of chyawanprash were recognized even before the minerals, vitamins, and antioxidants became well-known as dietary supplements (Parle and Bansal). According to Ayurveda, it is categorized as Rasayana, which enhances the body's integrity or health in a variety of ways, including better digestion, delayed aging, the elimination of degenerative processes, and many more.

In order to clarify the therapeutic potential and quality standards of chyawanprash, it also aims to assess its physicochemical properties and bioactive components [6]. By bridging the gap between scientific research and Ayurvedic knowledge, this study hopes to advance our understanding of Chyawanprash and open the door for its incorporation into modern medical practices. In the process, it embraces the rigor of scientific study in the goal of overall welfare while attempting to uphold the tradition of this age-old treatment.

Fig no 2 : Herbal chyavanprash

1. Strengthens Immune Function

A traditional bioactive health supplement from India is called chyawanprash. This is the greatest medication for boosting immunity. Chyawanprash's amla, or Indian gooseberry, has a high vitamin C concentration that strengthens immunity. Additionally, it has been demonstrated that amla has adaptogenic qualities that help the body control immunity and adjust to stress. Because of its many noteworthy health benefits, amla juice is also a mainstay in the diets of many health-conscious people [6].

2. Avoids Infections During the Season

Some people may get sick as a result of seasonal changes. Chyawanprash aids in the body's defense against viral and seasonal ailments. To fully comprehend this specific benefit of chyawanprash, more research is needed.

3. Promotes Digestive Health

The digestive tract is improved by the components in chyawanprash. They control gastrointestinal processes and aid in the relief of gastritis. This ayurvedic medication's carminative qualities aid in preventing flatulence. By encouraging digestion, chyavanprash also aids in the removal of accumulated excreta, or waste materials. It facilitates digestion and bowel motions [7].

4. Aids in Combating Respiratory Conditions

Those with long-term and chronic respiratory conditions may benefit from the herbs in this traditional blend. It treats respiratory infections, coughing, and asthma. Additionally, chyawanprash may enhance lung function. It promotes healthy respiratory passages and shields the body from illness.

5. Assists in Blood Purification

Excess contaminants are often found in the bodies of people who have busy lives, sleep little, or eat junk food excessively. These poisons can cause a number of problems and illnesses when they build up in the body. They also interfere with your body's natural blood purifying process. Consuming chyawanprash aids in blood purification and the body's removal of excess toxins [7].

MATERIALS AND METHODS:

Materials:

Collection of samples : *Phyllanthus embellica* (Amla),*Syzerium cumini* (Java plum seeds powder) ,*Momordica Charantia* (Bitter guard),*Zingiber officianilis* (Ginger),*Cinnamonum verum* (Cannamon),Black Jaggery and ghee were collected from areas of Nashik District .

Methods of preparation:

Preparation of chyavanprash:

Step 1 :

- One hundred grams of uncooked *phyllanthus embellica* (Amla) were placed in containers and cooked for one hour over a low heat with enough water.
- Remove the seeds from *Phyllanthus embellica* (Amla) after it has boiled.
- The pulp was then mashed to create a consistency paste.

Step 2 :

- In vessels, 20 g of raw *Momordica charantia* (Bitter Guard) were cooked for 30 minutes over a low flame with enough water.
- Remove the seeds from *Momordica charantia* (Bitter guard) after it has boiled.
- Next, make a paste by blending 2 grams of ginger and boiled momordica charantia (Bitter guard).

Step 3 :

- Heat 15 g of ghee in a pan, then add the phyllanthus embelica paste and stir thoroughly.\
- Then add black jaggery and still until dissolved .
- Add the ginger paste, *zingiber officianale*, and *momordica charantia* (bitter guard) and thoroughly mix all the ingredients.
- Then, to make sure all the components are thoroughly mixed, add 10 grams of Syzygium cumini (Java seeds and plium powder) and stir thoroughly.

Ingredients

Table no 1 : Formula of chyavanprash

Ingredients	Quantity (1)	Quantity (2)	Quantity(3)	Role
Phyllanthus embellica	100 gm	100 gm	100 gm	Immune booster
Syzygium Cumini	10 gm	15 gm	20 gm	Treat digestive issue
Momordica Charantia	20 gm	25 gm	30 gm	Immune booster,treat diabetes
Zingiber officianilis	2 gm	4 gm	6 gm	Digestive properties , Preservatives
Black Jageery	3 gm	5 gm	6 gm	Sweetner
Ghee	15 gm	20 gm	25 gm	Flavour

Profile of ingredients :

1.*Phyllanthus embellica*:

Phyllanthus emblica Linn., also known as Indian gooseberry or Amla, is commonly used in Ayurvedic medicine to treat respiratory infections, skin disorders, and gastrointestinal issues. The fruit's high polyphenol content contributes to its strong antioxidant properties [8].

Fig no 3 :*Phyllanthus embellica*

2.*Momordica Charantia*

Often called a bitter apple, bitter melon, or balsam pear, the tropical vine known as the bitter gourd (*Momordica charantia L.*) belongs to the genus Mordica, order Cucurbitales, and family Cucubitaceae. The plant is widely farmed as a vegetable crop and medicine in China, India, and South East Asia. Although the whole bitter gourd plant is edible, it is mostly grown for its fruit. New shoots, fruits, and flowers are used as flavorings in many Asian dishes. Fruits are often cooked with other vegetables, especially in soups, due to their somewhat bitter flavor [9].

Fig no 4 : *Momordica Charantia*

3. Syzygium Cumini

Popular for its fruit, lumber, and aesthetic value, Syzygium cumini is a tropical evergreen tree in the Myrtaceae family of flowering plants. Malabar plum, Java plum, black plum, jamun, jaman, and jambul are some more names for it. It is native to the Indian subcontinent and Southeast Asia. It can reach a height of 30 meters (100 feet) and live for over a century. This rapidly spreading plant is considered an invasive species in many parts of the world.

Among the locations where *Syzygium cumini* has been introduced include Australia, Hong Kong, Singapore, and islands in the Pacific and Indian oceans.

Fig no 5 : *Syzygium Cumini*

4.Zingiber officianilis

The rhizome of *Zingiber officinale* is widely used for culinary and medicinal reasons throughout the world due to its ethnomedical and nutritional advantages. Most traditional and alternative medical systems, including Ayurveda, Siddha, Unani, Homeopathy, Tibetan, and Chinese, prescribe Z. officinale either alone or in combination for infectious and non-communicable diseases. The plant is being studied primarily for its antimicrobial, anticancer, antioxidant, antidiabetic, nephroprotective, hepato-protective, larvicidal, analgesic, anti-inflammatory, and immunomodulatory qualities [11].

Fig no 6:*Zingiber officianilis*

4. Cinnamonum verum

Many Asian nations, especially Sri Lanka and Southern India, cultivate *cinnamonomum verum* Lauraceae.

Cinnamon is a traditional folk herb in China, Russia, and Korea. One People from all over the world have been using cinnamon for centuries. The inner bark of the tropical evergreen shrub is the source of both cinnamon varieties, *Cinnamomum zeylanicum* (CZ) and *Cinnamon cassia* (CC). 2. Cinnamomum verum shoots from their outer cork beneath the parenchyma are used to make the medication. The surface is striated lengthwise, and the fracture is short and splintery [12].

Fig no 7 :*Cinnamonum verum*

5. Black Jageery

Grown in Africa, Brazil, North America, Central America, Southeast Asia, and the Indian subcontinent, black jaggery is a traditional non-centrifugal cane sugar. It can range in color from golden brown to dark brown and is a concentrated product of cane juice and occasionally date or palm sap that has had the molasses and crystals removed. It is composed of various insoluble materials such proteins, wood ash, and bagasse fibers, with up to 50% sucrose, 20% invert sugars, and 20% moisture. Muscovado, a necessary sweetener in Portuguese, British, and French cooking, is remarkably similar to black jaggery [13].

Fig no 8 :Black Jageery

7.Ghee

Goghrita, sometimes referred to as cow ghee, has important Ayurvedic uses in the areas of healing, vata balancing, anti-aging, and cognitive improvement. Apart from its rejuvenating and aphrodisiac properties, it serves as the foundation for conventional preparations that enhance health outcomes [14].

Fig no 9: Ghee

RESULTS AND DISCUSSION:

Evolution parameters:

To make sure that chyawanprash satisfies safety and quality requirements, a variety of tests and evaluations are utilized to evaluate its efficacy and quality. The following are some crucial assessments for chyawanprash:

1. Organoleptic Assessment: This entails examining the chyawanprash's physical attributes, including its color, texture, taste, and odor. Chyawanprash should have a distinct flavor that blends sweetness, sourness, and spice, as well as a consistent, smooth texture.

Table 2: Organoleptic Evaluation of Chyawanprash [15].

Parameters	Characteristics	Evalution Results
Colour	Typical colour	With acceptable range
Odour	Sweet ,sour ,spicy	Characterisics
Taste	Sweet ,sour ,spicy	Characterisics
Texture	Smooth ,homogenous	Characterisics

2. Microbiological Testing: Among other dangerous microbes, this test looks for mold, yeast, and bacteria. To be free of contaminants, chyawanprash must adhere to microbiological safety regulations [15].
3. Heavy Metal Analysis: Chyawanprash should be checked for heavy metals such as lead, arsenic, mercury, and cadmium because they might be harmful in high concentrations [15].
4. Pesticide Residue Testing: By identifying any pesticide residues, this test guarantees that the Chyawanprash is devoid of dangerous elements.

evaluation test:

1. Muddy brown ppt: We started by taking 2 grams of the sample, then we added 4 drops of glacial acetic acid and 4 drops of NaNO2. We then shaken the mixture for 2 to 5 minutes, and muddy brown ppt emerged.
2. Saponin testing:
After diluting 2 grams of the sample with 10 milliliters of water and shaking it for 20 minutes, foam started to form.
3. Ferric chloride Check for flavonoids:
Five drops of Fecl3 were applied to two grams of the material, which became green before turning blue.
4. The sulfuric acid test for glycosides involves taking two to five grams of material, adding two milliliters of glacial acetic acid, ferric chloride, and sulfuric acid. A brown ring forms at the liquid's interference.
5. Steroid test:
After adding two drops of acetic anhydride to two grams of sample, we added H2So4, which caused a dark green or blue color to develop.
6. Tannine test: When we introduced two grams of a sample to the tannine reagent, a dark blue, greenish color emerged.

Table no 3 : evaluation parameters of herbal chyavanprash.

Test	Observation	Result
Ellagic test for phenol 2gm of chyawanprash + 4 drops of glacial acetic acid +4 drops of NaNO2 ,shake the mixture .	Muddy brown ppt appearance	Phenol was present
Test for saponine : 2 gm of chyawanprash diluted in 10 ml water ,shake it for 20 miniutes .	1 cm layer of foam appearance	Saponine were present
Ferric chloride test for flavonoids : 5 drops of Fecl3+ 2 gm of chyawanprash.	Green colour turns blue	Phenolic hydroxyl group
Sulphuric acid test for glycoside :2.5 gm chyawanprash +2 ml glacial acetic acid +FeCl3 +H2SO4	Brown ring appears at liquid interfere	Presence of glycosiode
Test for steroid test : 2 gm of sample + 2ml acetic anhydride + H2SO4	Dark green or blue colour appears	Steroid was present
Test for tannine :2 gm of sample + Tannine reagent	Dark blue greenish gray colour	Tannine present

Fig no 10: Herbal chyavanprash

Future scope :

Chyawanprash is a traditional recipe that companies have developed and popularized. Each business has retained the content they have produced as proprietary and has not published it in academic journals, possibly to maintain control over the information and its relationship to their product. This traditional substance, which is a complex blend of hundreds of powerful phytocompounds, has a wide range of biological effects on numerous targets. It is very challenging to adequately describe the efficacy that the mechanism of action supports due to the product's intricacy.

Other benefits of herbal chyavanprash [21].

1.Slows Ageing Process
2.Promotes Digestion
3.Promotes healthy skin
4.Strengthening bones
5.Improves sexual life
6.Improves respiratory health
7.Improves memory
8.Strengthens the heart

CONCLUSION:

In Type II controlled diabetics, oral administration of chyawanprakash at the recommended dosage did not raise any safety concerns, as evidenced by the absence of statistically significant changes in laboratory and clinical parameters such as blood sugar, HbA1c, microalbuminuria, liver and renal function tests, lipid profiles, etc. The subjects' energy levels improved in a statistically significant way. The results showed that chyawanprakash was appropriate for Type II diabetes individuals using oral hypoglycemic medications.

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