

# Herbal Formulation on Pcod Chyawanprash

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**Abstract**—An Ayurvedic health supplement called Chyawanprash (CP) is composed of a highly concentrated mixture of minerals and plants that are high in nutrients. It is intended to replenish depleted life force (ojas) reserves and maintain vitality, strength, and endurance while delaying the course of becoming older. The main element of CP, Amla (Indian gooseberry), the world's richest source of vitamin C, is made by processing over 50 medicinal plants and their extracts. The process of making CP entails first making herbal infusion, then drying the extract, mixing it with honey, and adding, as a standard, powdered fragrant herbs (clove, cardamom, etc.). The final result tastes sweet, sour, and spicy pungent and bitter and has a consistency similar to fruit jam. To determine the effectiveness of CP as a treatment, scientific research is necessary. The available data on the therapeutic potential of CP is dispersed, and it must be brought together. An attempt was thus made to gather the disparate data. From ancient Ayurvedic scriptures and treatises to ethnobotanical, ethnopharmacological, and scientifically proven literature, CP's medicinal role is highlighted. Relevant citations for the subject were vetted. Two in-house batches of CP sample were procured from market. These batches were evaluated by physicochemical methods and its bio-efficacy was determined by various biological methods like antioxidant study and microbial contamination study and finally stability study was performed on the formulation according to the ICH guidelines.

PCOS, or polycystic ovarian syndrome, is a prevalent condition affecting women in the reproductive age range of 15 to 40. Gynecological and endocrine issues are to blame. These days, PCOS is a lifestyle condition. Due to fast food consumption, sedentary behaviors, and a flawed lifestyle. The primary causes of PCOS include elevated insulin, hyper androgen (male hormone), and luteinizing hormone (LH), albeit the precise reason is uncertain. PCOS manifests as hirsutism, thinning hair,

acne, constipation, oligomenorrhea, delayed menstruation, and obesity. Hence to overcome this PCOS related problem we have prepared this ayurvedic malt (Chyawanprash).

**Index Terms**—Herbal formulation for PCOD Ayurvedic treatment for Chyawanprash for hormonal balance Natural remedies for PCOD Ayurvedic approach to PCOS management Herbal tonic for women's health

## I. INTRODUCTION

Chyawanprash (CP), which is also referred to as chyavanaprasha, chyavanaprash, chyavanaprasam, and chyawanaprash, is made up of the words "Chyawan" and "Prasha." The term "Chyawan" represents "degenerative change" and is the name of a sage. A food item or. A medication that is appropriate for utilization. In fact, CP is a complete "metabolic" tonic that is used to protect and enhance health using a range of herbs. In accordance with a traditional Ayurvedic recipe, chyawanprash, an ancient Indian composition (a polyherbal jam), is enhanced with a variety of herbs, herbal extracts, as well as minerals that have been treated. Since ancient times, CP has been used as a necessary health supplement, according to several specialists. With its many health advantages, chyawanprash has been used for centuries as a medication to boost longevity and immunity as well as as a dietary supplement. (1)

Regardless of societal, political, or scientific considerations, chyawanprash has been a part of every Indian's life since its introduction. Prior to the development of vitamins, minerals, and antioxidant supplements, it was one of the foods most valued for its antiaging properties. A

subset of Ayurveda called Rasayana encompasses a variety of specific techniques meant to increase longevity, prevent illness and aging, stop degenerative processes, and foster optimal health. Out of every Rasayana formulation listed in the ancient and medieval texts, (2)

Without a doubt, CP is the most significant. Since it first hit the consumer market in the 1950s, this composition has advanced significantly as an over-the-counter product. Because it addresses the preventative, promotive, and curative facets of health and has several health advantages, it is well valued. (3) Amla/Amalaki (Phyllanthus emblica/Indian gooseberry) pulp is used as the foundation for chyawanprash, which is said to be the best Rasayana for maintaining homeostasis. Amla-containing chyawanprash has a complex flavor that combines astringent, pungent, bitter, sour, and sweet notes. (4) Chyawanprash became available to consumers as an over-the-counter product in the 1950s. Chyawanprash is a mixture of potent Ayurvedic herbs and minerals which investigates the human body's endurance and strength. Simple herbal decoctions and extracts are combined with honey, jaggery, and a few spices to make chyawanprash. Since ancient times, it has been utilized as an immunity enhancer to build strength, stamina, and endurance. It is also an essential anti-aging compound. (5)

#### Origin:

The legend of the forest sage Chyawan Rishi is the source of CP's usual name. Several ancient sacred texts, including the Puranas and the Mahabharata, explain how the twin Ashwini Kumar brothers who served as the gods' royal doctors during the Vedic era—created this polyherbal remedy. Preparation to increase Chyawan Rishi's power and vigor and make him younger. The recipe, named for the old sage, was created in his hermitage on Dhosi Hill, close to the Narnaul region, in the Indian state of Haryana. It was named "Chyawanprash." (6)

#### Polycystic Ovarian Syndrome (PCOS):

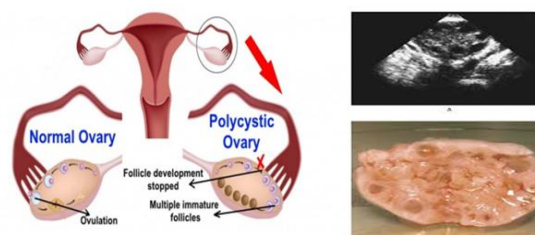
A metabolic condition known as PCOS (Polycystic Ovary Syndrome) affects women who are in their reproductive years (ages 12 to 51) due to hormonal imbalances. Increased levels of male hormones can cause women to miss their periods, experience irregular ovulation, which makes pregnancy difficult,

and develop abnormal facial and body hair development, all of which can eventually result in diabetes and heart disease. PCOS is a significant medical issue that has to be treated with surgery or other medical care.

PCOS is a severe medical disorder that affects between 0.2% and 2.5% of women worldwide. Polycystic ovarian syndrome (PCOS), often referred to as hyperandrogenic anovulation (HA) or Stein-Leventhal syndrome, is one of the most common endocrine system disorders that affect women of reproductive age. Infertility, hirsutism, acne, obesity, and irregular menstruation are some of the symptoms of this chronic and diverse illness.

Many women are unaware that they have PCOD or PCOS. The following symptoms constitute a group that impact ovulation and the ovaries:

- Ovarian growths
- elevated masculine h.
- hormone levels Missed or erratic periods.



#### KEY PLANT INGREDIENTS OF CHYAWANPRASH



Figure 2: Key plant ingredients of Chyawanprash

- Ideal properties of CP:

The many health advantages of chyawanprash, a classic Ayurveda concoction, make it popular. Since Chyawanprash contains a variety of substances that target different elements of hormonal balance and general health, it may be helpful in controlling PCOS (Polycystic Ovary Syndrome).

PCOS may benefit from chyawanprash in the following ways:

1. Helps in balancing hormones and improves skin health
2. Boosts immunity & reduce fatigue
3. Rich in vitamin-C
4. Acts as a blood purifier
5. Reduce acne and facial hairs
6. Balancing the mood swings and anxiety
7. Prevents hairfall
8. Helps in irregular & painful periods
9. Anti-aging properties
10. Improving mental health, emotional well-beingness & relief
11. Enhancing digestion.
12. Maintain heavy bleeding and scanty flow. (8)

- Drawbacks of CP:

Although there are many health advantages to chyawanprash, an Ayurvedic supplement, there are some possible disadvantages to take into account when treating PCOS (polycystic ovary syndrome):

1. High Sugar Content
2. Increased Weight Gain
3. Potential Interactions with Medications

4. Insulin Resistance
5. Quality and Standardization
6. Lack of Scientific Evidence
7. Potential Allergic Reactions. (9)

Necessity for standard of CP:

There are several important reasons why a standard for chyawanprash in a case of PCOS (polycystic ovary syndrome) is necessary.

- Consistency in Quality:

There are several variations in the components and production techniques of chyawanprash, a herbal mixture used in traditional Ayurvedic treatment.

- Herbal Composition and Dosage:

Herbs and components may be used in different amounts in different brands

- Effectiveness and Safety:

For those with PCOS, a standard for chyawanprash would assist guarantee that it is safe and effective. For instance, several of the herbs in Chyawanprash have the ability to affect inflammation, insulin sensitivity, and hormone levels all of which are factors in PCOS.

- Research and Evidence:

Chyawanprash's usage of some of its constituents to treat PCOS symptoms has some anecdotal and early scientific support, but standardizing the formulation would promote more study and clinical studies.

- Regulatory Oversight:

A standardized product would be governed by regulations, which may assist avoid ingredient handling errors, contamination, or mislabeling. (10)

Table:1 Ingredients of CP with their botanical identities and specific therapeutic roles:

|    |           |                     |                            |                                                                                       |
|----|-----------|---------------------|----------------------------|---------------------------------------------------------------------------------------|
| 1) | Ashoka    | Saracaasoca         | Asoka tree, Sorrowlesstree | Relief Menstrual pain, Improves Hormomal balance, Reduceinflammation&uterine bleeding |
| 2) | Amla      | Phyllanthus emblica | Amla,Amlaki                | Regulatemenstrualcycle, reduce inflammation Improves fertility in women               |
| 3) | Shatavari | Asparagus racemosus | Shatavar, Shatamall        | Improving fertility, Easing menstrual discomfort, Menopauserelief                     |
| 4) | Arjuna    | Terminalia arjuna   | Arjun                      | Relief from excessive bleeding & heavy flow, reduce inflammation & swelling in uterus |
| 5) | Dashmool  | Aegle marmelo       | Tenroots                   | Promoteoverallwellbeingand reduce whole body inflammation                             |
| 6) | Mulethi   | Glycyrrhizaglabra   | Mulethi, jethimadu         | Helpsinbalancinghormones& Antiinflammatory                                            |
| 7) | Gokharu   | Tribulus terrestris | Chotagokharu               | Pain relief, Reduce menopausal symptoms, vaginal dryness& moodswings                  |
| 8) | Lodhara   | Symplocos racemosa  | Lodh,Lodha                 | Manage female disorder like (Leucorrhea), skin issues likeacne,pimples,patches        |
| 9) | Gulkand   | Rosa damascena      | Rosepetalsjam, damask      | Helpsinbettersleepandclams mind, relief from menstrual cramps                         |

|     |              |                        |                                    |                                                                                 |
|-----|--------------|------------------------|------------------------------------|---------------------------------------------------------------------------------|
|     |              |                        | rose                               |                                                                                 |
| 10) | Kishmish     | Vitisvinifera          | Kismis                             | HelpswithPCOS,Irregular periods, menstrual issues like blood cloth              |
| 11) | Anjeer       | Ficuscarica            | Figtree                            | Antioxidants, Alleviating premenstrual syndrome symptoms                        |
| 12) | Badam        | Prunusdulcis           | Almendras (Spanish) Almondtree     | Promoting hormonal balance, Antinflammatory                                     |
| 13) | Brahmi       | Bacopa monnieri        | Brahmi,Bacopa,H erpestismonniera   | Antioxidant, prevent anxiety & stress, Atinflammatory                           |
| 14) | Balchad      | Nardostachys jatamansi | Jatamansi                          | Improvessleep,manage anxiety,reducebloodclottng                                 |
| 15) | Kalimirch    | Pipernigrum            | Blackpepper, pepper, common pepper | Relieves menstrual pain, blood purifier, relieves muscle pain                   |
| 16) | Dhatriloh    | Dhatriloha             | Dhatri lauh, Dhatri loha           | Improves haemoglobin, iron stores in patients with iron deficiencyanemia        |
| 17) | Punernavadi  | Boerhavia diffusa      | Redspiderling,Tarvine              | Helpstoreduceurinarytract infectionandabdominalpain                             |
| 18) | Mandoor      | -                      | -                                  | Relief from abdominal cramps due to dysmenorrhea (painful menstruation)         |
| 19) | Godantibhasm | Gypsumor selenite      | Godanti, Gowdanti                  | Reducewhitedischarge,useful in menorrhagia (heavy bleeding) during menstruation |
| 20) | Trivangbhasm | Withaniasom nifera     | Shuddhavanga, Shuddhanag           | Leucorrhea,Infertility,general weakness                                         |
| 21) | Bholbadhhras | -                      | Guduchisatva                       | MaintainRBCproductionand HBlevel                                                |
| 22) | Manjishta    | Rubia cordifolia       | Indian madder, common madder       | Improves Blood purification, reduce abdominal pain &bleeding                    |
| 23) | Jaggery      | Saccharum officinarum  | Gur,Guda, Bellam                   | Boosting immunity, regulatehormone,bloodpurification, menstrualpainrelief       |
| 24) | Ghee         | Podophyllum emodi      | Clarifiedbutter                    | Overallreproductive wellbeing, fertility, hormonal balance, sweetner            |
| 25) | Honey        | Apismellifera          | Honey,madhu                        | Alleviating dysmenorrhea symptomsPreventing vaginal atrophy                     |
| 26) | Clove        | Syzygium aromaticum    | Clove,laung, clavo                 | Improvesfertilityboostfemale energy                                             |
| 27) | Elaichi      | Elettaria cardamomum   | Cardamom, Green cardamom           | ImprovesPCOSSymptoms &menstrual cycle regulation, antinflammatory,              |
| 28) | Tiloil       | Sesamum indicum        | Sesame,Til                         | Supportfertility,vaginal dryness, regulates menstrual irregularity              |

#### 1. Amla:



Synonyms: *Ciccaemblica* (L.) Kurz  
*Diasperusemblica* (L.) Kuntze *Dichel act*  
*inanodicaulis*Hance  
*Emblica arborea* Raf. *Emblica officinalis* Gaertn.  
*Phyllanthus glomeratus* Roxb. (11)

#### Biologicalsource:

Amla (*Phyllanthus emblica*) is a fruit that comes from the *Phyllanthus emblica* tree.

- Family:Euphorbiaceae
- Chemicalconstituentes:

Amla is one of the most extensively studied plants. Reports suggest that it contains tannins, alkaloids and phenols.

Fruit sha e28% of the total tannins distributed in the whole plant.t

properties; one on hydrolysis gives gallic acid, ellagic acid and glucose wherein the other gives ellagic acid.

- Uses:
- Thefruit,as well as other parts of the tree,are used in traditional Indian medicine (Ayurveda) and have various medicinal and nutritional properties.

- Hormonal Balance
- Weight Management
- Anti-oxidant Property
- Insulin Sensitivity
- Menstrual Regularity. (12)

## 2. Ashoka:



- Synonyms: Ashok, Nata, Hempushpa, kankeli, pinda pushpa, madhupushpa.
- Biological source: It is obtained from dried stem bark of the plant *Arca indica* Linn.
- Family: caesalpiniaceae.
- Chemical Constituents: The chemical constituents of ashoka bark is flavonoid, tannins, Steroids, volatile oil, glycosides, and many compounds of potassium, Sodium, calcium, aluminum, iron, magnesium and phosphate. Powder bark also carries cellular species such as tracheids, stone, parenchyma, sieve tubes and other cells.
- Uses:  
Ashoka Chal, also known as Ashoka rishta, is an Ayurvedic herbal tonic that's been used for centuries to support women's health, particularly in managing Polycystic Ovary Syndrome (PCOS) symptoms.  
Hormonal Balance Menstrual Regulation  
Anti Inflammatory Property. (13)

## 3. Lodhra:



- Synonyms:  
*Symplocos racemosa*, Rodhra, Paithkalodhra, Sabara Lodhra, Tirita, Mugam, *Symplocos* bark, Lodhar, Lodha, Pachotti, Vellilathi, Vellilothram, Lodhuga,

Lodh, Lodhpathani

### b. Biological source:

*Symplocos racemosa* Roxb., typically referred to as Lodhra, is a highly esteemed medicinal plant in traditional Indian medicine.

### c. Family: Symplocaceae

### d. Chemical constituents:

This incredible herb shows the presence of bio-active components like Colloturine, Loturidine, Loturine, Betulinic Acid, Oleanolic Acid, Acetyl Oleanolic Acid, Ellagic Acid, Flavonoids, Symposide, Salireposide, *Symplocoside*, Betasito-glycoside, *Symploveroside*, Benzoylsalireposide, Salireposide,

### e. Uses:

Lodhra (*Symplocos racemosa*) is a popular Ayurvedic herb that's been used for centuries to support various health benefits, particularly in managing Polycystic Ovary Syndrome (PCOS) symptoms.

Managing Female Disorders Like AsLeucorrhea (Excessive Vaginal Discharge) Acts as A Hemostat (Process to Stop Bleeding) During Menstruation

Improve Fertility

Helps in regulating menstrual cycle. (14)

## 4. Arjuna:



- Synonyms: nadisarja, kakubha, kumbuk, Arjun, njan, whitemurdh.
- Biological source: It is obtained from dried stem bark of the plant *Terminalia arjuna* L.
- Family: combretaceae
- Chemical Constituents: Triterpenoids: Arjunin, arjunic acid, arjunolic acid, arjungenin, terminic acid.

Glycosides: Arjunetin, Arjunaphthanolside, Arjunoside I, II and Terminoside-A. Sitosterol: Sitosterol.

Flavonoids: Arjunolone, Arjunone, Bicalcin, Luteolin, Gallic acid, Ethyl gallate, Kempferol, Proanthocyanidins,

Quercetin, Pelargonidin.

Tannins: Pyrocatechols, Casuarinin, Casurin, Punicallin, Punicalagin, Castalagin, Terchebulin,

Terflavin C.

Trace elements: Calcium, Aluminium, Magnesium, Silica, Zinc, Copper.

• Uses:

- i. It is also very use ful in the treatment of any sort,spermatorrhoea,ecchymosis and
  - ii. Sexually transmitted diseases as gonorrhea and
  - iii. Thought to be useful as tringent,cooling,aphro disiac,
  - iv. Cardio-tonic, and is used for ulcers,leucorrhoea,
  - v. Diabetes,cough,tumor,excessive perspiration,asthma,
  - vi. Inflammation and kind is orders etc.
  - vii. Insulin Sensitivity
  - viii. Antioxidant Property
5. Shatavari



a. Synonyms: -Asparagus racemosus, Wildasparagus, Satavar, Satmuli.

b. Biologicalsource:-

It is dried spinous shrub with tuberous roots of the plant Asparagus racemosus.

c. Family: -Asparagaceae

d. Chemical Constituents: -Shatavari contains saponins (2-5%), Steroidal glycosides (0.1-0.2%), Flavonoids (0.1-0.3%) and Polysaccharides (20-30%).

e. Uses: -

Shatavari is used as Anti-inflammatory, Anti-oxidant, Immunomodulatory, hormone balancer. Shatavari is utilized for reproductive health, aiding in menstrual regulation, fertility and balancing hormones and easing symptoms of imbalances. Additionally, it promotes digestive wellness, boosts the immune system and acts as an anti- inflammatory agent, particularly beneficial for joint health. (15)

6. Gokhru



a. Synonyms:Gokhru, also known as Gokshura,"puncturevine","devil'sweed," "goathead," and "caltrop,"

b. Biologicalsource:Gokhru, orTribulus terrestris, is an annual, creeping herb, commonly known as Chota Gokhru, and is the dried, ripe seeds of the plant.

c. Family:Zygophyllaceae

d. Chemical constituents: Fruit: Alkaloids 3.5%-5%, stable oil, aromatic oil, resins, glycosidic, carbohydrates, sponins and triterpenoids.

e. Stem:saponins,Herman,phytosterol.

f. Root:Reducing sugars, phenolic compound, saponins

g. Uses:

- i. Supports In Ovulation by Improving Follicular Development
- ii. Fertility Support
- iii. Reduce Stress and Anxiety. (16)

7. Brahmi:



Synonyms:

a. Brahmi, waterhyssop, thyme-leafedgratiola, herbofgrace, and Indian pennywort.

b. Biologicalsource:

c. Brahmi, also known as Bacopa monnieri, is a perennial, creeping herb belonging to the family Plantaginaceae, with its biological source being the whole plant, including the leaves and stems.

d. Chemical Constituents:

e. Alkaloids:Brahmine,herpestine,andnicotine.

f. Saponins: Bacosides A and B, hirsaponin, monnierasides I-III, and plantaginol.

g. Flavonoids: Apigenin, luteolin, and wogonin.

Triterpenes: Betulinic acid, D-mannitol, stigmastanol,  $\beta$ -sitosterol, and stigmasterol. Other: Cucurbitacin, monnierin.

Uses:

- Nervinotonic Memory enhancement.
- Anxiolytic (anxiety reduction). Used for epilepsy and insanity.
- May help with cognitive performance, verbal learning, delayed word recall, and memory acquisition.
- Stress Relief
- Improve Cognitive Function, Memory and Concentration. (17)

#### 8. Mulethi



a. Synonyms:

b. Glycyrrhiza glabra, licorice root

c. Biological source: obtained from dried roots and rhizomes of the Glycyrrhiza glabra plant

d. Family: Fabaceae

e. Chemical constituents:

The major constituents are triterpene saponins. Glycyrrhizin (Glycyrrhizic acid/glycyrrhizinic acid) is the major component (2-9%). Other constituents are flavonoids (isoflavones):

Liquiritin, isoflavanones, formononetin, polysaccharides, sterols, coumarins, asparagine

f. Uses:

- i. Anti-inflammatory Effect
  - ii. Androgen Regulation
  - iii. Stress Relief
  - iv. Balance Hormone
  - v. Provide Relaxation from Menstrual Problems. (18)
9. Gulakand



Synonyms: rose petal jam, rosejam

a. Family: Rosaceae

b. Biological source: Gulakand, a traditional Indian rose petal jam, is made from fresh rose petals and sugar, with some variations using honey or other sweeteners. The primary biological source is the rose plant, specifically the petals of species like Rosa damascena (Damask rose).

c. Uses:

- i. Provide Relaxation from Menstrual Problems
- ii. Calms Mind and Body
- iii. Antioxidant Property
- iv. Reduce Risk of Infertility. (19)

#### 10. Manjistha:



a. Synonyms: Rubiacordifolia

b. Family: Rubiaceae

c. Biological source: It is derived from the roots of Rubia cordifolia, from the stem and roots of Rubia cordifolia

d. Biological source: It is derived from the roots of Rubia cordifolia, from the stem and roots of Rubia cordifolia

e. Chemical constituents: The phytochemical constituents present in Rubia cordifolia are glycosides, saponins, anthraquinones, tannins, hexapeptides, quinones, triterpenoids. The main among all the phytochemical constituents of Rubia cordifolia are anthraquinones and naphthoquinones

f. Uses:

- i. It regulates menstrual health
- ii. Reducing risk of infertility

## iii. Reduce inflammation. (20)

## II. MATERIALS AND METHOD:

## Material:

Chyawanprash is a potent antioxidant paste prepared through the synergistic blending of around ashoka, lodhara, shatavari, arjuna, dash mool, mulethi, gokharu, amla, gulkand, kishmish, anjeer, badam, brahmi, balchhand, kalimirch, dhatriloh, punernavadi, godantibhasm, trivangbhasm, bholbadhh, jaggery, ghee, honey, clove, elaichi, til oil.

➤ Method: Formulation of Chyawanprash from herbal plan

500 Amla numbers were used in one batch. According to the Ayurvedic Formulary of India (AFI), 500 numbers can be prepared with 2.5 kilogram of fresh amla and 2.4 kg of sugar. 500 developed hybrid Amla fruits would weigh around 6.5 kg if they were available.

The typical procedure for making CP involves preparing 50 g of each medicinal plant, including ashoka, lodhara, shatavari, arjuna, dash mool, mulethi, gokharu, amla, gulkand, kishmish, anjeer, badam, brahmi, balchhand, kalimirch, dhatriloh, punernavadi, godantibhasm, trivangbhasm, bholbadhh, jaggery, ghee, honey, clove, elaichi, til oil are added to 16 L of drinkable water.

To make a bale (pottali), five hundred Amla fruits—each weighing between 15 and 20 g, for a total weight of 6.5 kg—are wrapped in sanitized cotton cloth and immersed in the previously specified herb mixture.

The mixture is then heated to a boil until reduce the decoction to one-fourth.

After removing the pottali, the seeds are extracted from the Amla, the pulpy part is rubbed on a sanitized muslin cloth, the fibers of the Amla are separated, and Amlapishthi, or the moist paste made from the pulp, is gathered.

The mare is disposed of once the decoction has been filtered.

Then, in an iron container, Amlapishthi is combined with Yamakadravyas (lipids: 500 g each of cow ghee and sesame oil) and cooked until it becomes brownish-red and the Yamaka (lipids) begin to separate.

and then incorporating jaggery into the herbal mixture.

## • Dosage:

1. For chronic issues: Take 1 spoon twice a day with hot milk.
2. For a cuteproblems: Take 1 spoon twice a day with hot milk or water.
3. For daily nourishment: Take 1 spoon once a day with water, milk or directly.

## Evaluation method of chyawanprash:

## • Material&amp;Methods:

| Sr.no | Name of the drug | Parts used     | Quantity |
|-------|------------------|----------------|----------|
| 1.    | Ashoka           | Stembark       | 0.20g    |
| 2.    | Amla             | Fresh amla     | 3g       |
| 3.    | Shatavari        | Root           | 0.20g    |
| 4.    | Arjuna           | Stembark       | 0.20g    |
| 5.    | Dashmool         | Root           | 0.20g    |
| 6.    | Mulethi          | Stembark       | 0.15g    |
| 7.    | Gokharu          | Driedleaves    | 0.15g    |
| 8.    | Lodhara          | Stembark       | 0.15g    |
| 9.    | Gulkand          | Gulkandjam     | 1 g      |
| 10.   | Kishmish         | Driedkishmish  | 0.40g    |
| 11.   | Anjeer           | Driedanjeer    | 0.40g    |
| 12.   | Badam            | Driedbadam     | 0.40g    |
| 13.   | Brahmi           | Panchanga      | 0.15g    |
| 14.   | Balchad          | Root           | 0.10g    |
| 15.   | Kalimirch        | Driedkalimirch | 0.05g    |
| 16.   | DhatriLoh        |                | 0.05g    |
| 17.   | Punernavadi      | Root           | 0.15g    |
| 18.   | Mandoor          |                | 0.05g    |
| 19.   | Godantibhasm     | Bhasm          | 0.05g    |
| 20.   | Trivangbhasm     | Bhasm          | 0.05g    |
| 21.   | Bholbadhh        |                | 0.05g    |
| 22.   | Manjishta        | Stembark       | 0.10g    |
| 23.   | Jaggery          | Jaggery        | 2g       |
| 24.   | Ghee             | Ghee           | 0.5g     |
| 25.   | Honey            | Honey          | 1g       |
| 26.   | Clove            | Driedclove     | 1g       |
| 27.   | Elaichi          | Driedelaichi   | 1g       |
| 28.   | Til oil          | Til oil        | 0.15g    |

The physiochemical characteristics and organoleptic properties of the Chyawanprash Nutraceutical formulation were assessed.

Published by the Ayurveda Pharmacopoeia of India (API) as official quality standards. These consist of microbiological analysis, pH, identification, and description. (27)

## 1) Organoleptic properties:

According to the market samples that were available, the consistency, flavor, and taste of chyawanprash differ from firm to firm. Our Chyawanprash and one that is sold under the name Dabur Chyawanprash are contrasted here. Comparing and noting the organoleptic characteristics was part of the findings. (28)

## Appearance:

- a) Colour: Dark brown colour
- b) Texture: Viscous/semi-solid

- c) Aroma: Sweet, strong  
d) Taste: Sweet, sour, bitter, pungent, astringent.

Initial stability study of formulation (Storage condition):

The Chyawanprash formulation was kept at room temperature in glass, plastic bottles, jars, and 400-gauge polyethylene bags. Variations in moisture content and microbiological load were monitored to examine the storage conditions. At one-month intervals, the formulation was extracted from each packing material and its quality was assessed throughout a 90-day period. In addition, the specimens were stored in a variety of environments to examine how temperature affects storage behavior, including natural sunshine ( $40 \pm 2^\circ\text{C}$ ), ambient temperature ( $28 \pm 0.5^\circ\text{C}$ ), and a refrigerator ( $5 \pm 3^\circ\text{C}$ ). The formulation was stored under these circumstances for ninety days at one-month intervals, and changes in moisture, microbial load, and organoleptic characteristics were examined.

## 2) Physico chemical test:

Physiochemical factors such as moisture content and loss on drying (LOD) at  $105^\circ\text{C}$  are crucial because too much water in plant materials can lead to bacterial development, the growth of mold, and degradation through hydrolytic activity.

### a) PH determination:

The pH of each sample was determined by preparing a 1% w/v aqueous solution of the samples and was measured using a pH meter.

Chyawanprash usually has a pH of 3.5 to 5.5, which indicates that it is rather acidic. Amla (Indian gooseberry), which is high in vitamin C (ascorbic acid), and other herbs and fruits used in the preparation are the major sources of this acidity. (29)

Finding the Moisture Content. The moisture content was determined using a vacuum oven and the AOAC 934.01 technique. The following formula, in brief, was used to determine the percentage of moisture in the samples:

$$\text{Moisture \% by weight} = \frac{(W1 - W2)}{(W1 - W2)} \times 100.$$

Here, W1 is the weight of the crucible in g with samples before drying, W2 is the weight of the crucible in g with samples after drying, and W is the weight of the empty crucible in g after heating and cooling. (30)

### b) Determination of total ash value:

Calculating the Total Ash. The AOAC 923.03 technique was used to determine the samples' total ash content. Equation was then used to get the proportion of ash. Here, W1 is the weight of the original samples in grams, W2 is the weight of the crucible containing ash in grams, and W is the weight of the empty crucible in grams.

$$\text{Total ash value \%} = \frac{W2 - W3}{W1} \times 100$$

### c) Estimation of vitamin C:

Estimation of Vitamin C. (e vitamin C content was determined using 2, 6-dichlorophenol-indophenol visual titration method. (Ascorbic acid content of the samples was determined by the following equation : (31)

$$\text{Estimation of vitamin C} = \frac{(\text{Titre} \times \text{Dye factor} \times \text{vol. made up Aliquot of extract} \times \text{weight of sample taken for estimation})}{100}.$$

## 3. Microbial assessment:

The procedure used to examine the preparation microbiologically as directed by Istavankiss (1984). Because it includes a component that prevents microorganisms from multiplying under test circumstances, the ayurvedic pharmacopoeia's technique for microbiological evaluation is invalid for the product. Therefore, the straightforward streaking plate approach was used to examine the preparation for the microbiological assessment. (32)

## 4. Toxicity and safety concern:

There is presently little data on the formulation of chyawanprash from in vitro and in vivo investigations. In addition, there as of right present, there is no clear information regarding toxicity. There is a great deal of room for future studies to draw more accurate conclusions about the application of this mixture in other medical problems. Safety and Toxicological Issues

Even though this formulation has been the subject of multiple studies, no clear information on toxicity has been made public up to this point. CP is thought to be safe when used as directed. In order to prevent negative effects on teeth, a reporter commended against consuming Amla just before bed. It is best to avoid chyawanprash right before bed because it contains a lot of Amla.

Typically, CP packaging lacks this information. (33)

## 5. Stability study:

This study was conducted in order to choose the best storage container and to perform stability and phase separation studies. Both plastic bottles and glass jars produced comparable outcomes in the specified areas, therefore both types of packaging are suitable. However, shielding it from sunlight is advisable.

## III. RESULT

The evaluation parameter like organoleptic test and physicochemical properties were carried out for the batches and some of them are shown in Table:

| Srno: | Evaluationparameter       | Observation                              |
|-------|---------------------------|------------------------------------------|
| 1.    | Physicalappearance        |                                          |
|       | a)Colour                  | Darkbrown                                |
|       | b)Texture                 | Viscous/semi-solid                       |
|       | c)Aroma                   | Sweet,strong                             |
|       | d)Taste                   | Sweet, sour, bitter, pungent, astringent |
| 2.    | Physicochemicaltest       |                                          |
|       | a)PHdetermination         | 3.9                                      |
|       | b)Moisturecontent         | 22.2%                                    |
|       | c)Determinationoftotalash | 2.8%                                     |



Evaluation of microbial load for 7 days and 30 days after preparation:

| Srno: | Timeperiod | Species  | Observation/ Result |
|-------|------------|----------|---------------------|
| 1.    | 7days      | Bacteria | Negative            |
| 2.    | 7days      | Fungi    | Negative            |
| 3.    | 7days      | Yeast    | Negative            |

| Sr.no: | Timeperiod | Species  | Observation/ Result |
|--------|------------|----------|---------------------|
| 1.     | 30days     | Bacteria | Negative            |
| 2.     | 30days     | Fungi    | Negative            |
| 3.     | 30days     | Yeast    | Negative            |

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