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A Review on Monographs of Allium cepa

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ABSTRACT:-

People who live in today's highly stressed society are becoming more and more prone to a variety of illnesses, many of which are less amenable to conventional medical treatment. Onions are frequently utilized in food preparation because of their well-known medicinal qualities. The perfect vegetable to cook with, use as a garnish, and cure ailments. The essential oil from the one variety of onion (Allium cepa) used in this investigation was extracted, characterized, and stored for use in commerce. The oil was extracted using a steam distillation process with chloroform. One kind of onion was collected and used for the study.

INTRODUCTION

Herbal medicine pharmacopoeial monographs should begin with a definition that aligns with the title of the monograph and continue with quality standards pertaining to identity, purity, and content. Test methods are described in individual monographs together with the matching specifications. An official title, a definition, a

section on production, a section on identification, a section on tests covering, for instance, physicochemical tests and, where appropriate, tests on contaminants, and an assay section on identifying constituents with known therapeutic activity, active, or analytical markers are some of the possible additions to the monograph. There may also be additional sections with guidance on labeling and storage.. [1]

➢ REGULATION AND GUIDELINES OF US, EUROPE AND INDIA :-

Pharmacopoeia is a reference book for the preparation of quality medicines published by the authority of a government or a concerned society (e.g., British pharmacopoeia, Indian pharmacopoeia, Japanese pharmacopoeia), On the other hand, therapeutic compendiums and herbal pharmacopoeias are examples of therapeutic and qualitative monographs on botanicals (description of preparation on single topic). A pharmacopoeial monograph is a compilation of information on Active Pharmaceutical Ingredients (API) or Products (APP) that includes tests for solubility, impurity, identification, assay methodology, and impurity profiles. A herbal monograph is a written document that describes a medicinal plant and offers details necessary for accurate identification. It includes the essential information, such as terminology, usage, components, range of application, adverse effects and contraindications, compatibility with other drugs, dose, and incompatibilities.

usage and effects of the plant. Pharmacopoeia is a vital resource for any people or group involved in pharmaceutical manufacturing, research and development, testing, and distribution worldwide. Through the development of standards of identity, purity, and analysis for botanicals, including the review of traditional and scientific data regarding their efficacy and safety, herbal pharmacopoeia seeks to promote the responsible use of herbal medicines with the highest possible degree of efficacy and safety. The goal of the American Herbal Pharmacopoeia (AHP) and other international pharmacopoeias (such as the British, European, Chinese, and Indian pharmacopoeias) is to encourage the responsible use of herbal medicines that have the highest level of safety and efficacy possible. This information is then disseminated through monographs as well as additional works. The Botanical Pharmacopoeia (BP) is a vital reference used in over 100 countries. The American Herbal Pharmacopoeia (AHP) aims to produce 300 monographs on botanicals, including many of the Western, Chinese, and Ayurvedic herbs most commonly used in the USA. The Pharmacopoeia of the People's Republic of China (PPRC, Eng. Ed. 2000) contains monographs for hundreds of medicinal plants used in Traditional Chinese Medicine. The Indian Herbal Pharmacopoeia (IHP) has 52 monographs on Indian medicinal plants. The African Herbal Pharmacopoeia (AfrHP) offers thorough and current botanical, commercial, and phytochemical information on over fifty of the most significant African medicinal plants. Many WHO member states adhere to one or more of the pharmacopoeia of other countries instead of having their own. countries (for example, Australia requires the authentication of herbal raw ingredients to the applicable British Pharmacopoeia monograph). In order to promote international harmony in the quality control and use of herbal medicines and to serve as models for the development of national formularies, the World Health Organization (WHO) has published 117 herbal monographs in four volumes since 1999. Additionally, an additional volume (30 monographs, 13 new and 17 adopted from the existing monographs) has been published for the newly

independent states (NIS) and the countries of Central and Eastern Europe (CCEE). A comprehensive collection of information regarding a specific medicinal plant or crude medicine is presented methodically in each of the WHO monographs, covering 19 topics including (I) Definition, (ii) Synonym to..., (xvii) Dosage forms, (xviii) Posology, and (xix) References. This herbal monograph guideline includes extensive scientific references regarding the effectiveness, safety, and quality of therapeutic plant sand herbal pharmacopoeia stands for botanical monographs that are medicinal and of high quality.

It is not appropriate to consider the WHO monographs as an official pharmacopoeial monograph that can take the place of official compendia. Crude plant and animal materials such as leaves, flowers, fruit, seeds, stems, wood, bark, roots, rhizomes, ergot, ephedra or other parts, and Spanish flies, whether whole, broken up, or powdered, are included in monographs of organized drugs. On the other hand, materials such as juices, gums, fixed oils, essential oils, latex, resins, fish liver oils, musk, beeswax, specific hormones, enzymes, and antitoxins in fresh or dry states are included in monographs of unorganized drugs. [(2)]

2 The Indian Pharmacopoeia's Herbal Drug Standards: A Historical Account :-

The IP is a legally recognized book that contains standards for drugs and their formulations in India. To ensure that the drugs are of the highest caliber, the IP specifies requirements for identification, purity, and strength (Garg, 2016). IP is published by the Ministry of Health and Family Welfare of the Indian government. Periodically, the main IPI edition is updated with addenda that include new monographs and address critical changes that need to be made to the current monographs. IP and the Addendum are equally empowered. IP originally appeared in the Bengal Pharmacopoeia and General Conspectus of Medicinal Plants, which was published in 1844 and is sometimes known to as Bengal Pharmacopoeia. Although some products were imported from Europe, the primary focus of this pharmacopoeia was on indigenous remedies. Published in 1868, it was the first Indian pharmacopoeia, containing both officially recognized medications from the British Pharmacopoeia of 1867 and certain local medicines. The Indian Pharmacopoeial List of 1946 was added to the British Pharmacopoeia of 1932. The Indian Pharmacopoeia, also known as the Pharmacopoeia of India, was established in 1955 subsequent to the establishment of an Indian Pharmacopoeia Committee in 1948, coinciding with the nation's independence. In 1960, it was published along with a supplement. This pharmacopoeia comprised both traditional and western medications; The Pharmacopoeia of India: Indian Pharmacopoeia 1966, with a supplement from 1975, was created using a similar methodology. The Pharmacopoeia of India, 1985, and its Addenda, 1989, and 1991 did not include traditional drugs because the publication of conventional system medicines was investigated independently. Only herbal medications that met unambiguous quality control requirements were approved for inclusion (Indian Pharmacopoeia, 1996a).IP 1966 saw the first attempt to create the criteria for vegetable pharmaceuticals.

around eleven drugs that were widely prescribed at the period. Several national laboratories obtained and analyzed real samples of these drugs. Based on the results of these studies, the Indian Medicinal Plants Sub-

Committee created criteria for the following three medications: Vidang (Embelia ribes), Rasna (Alpinia officinarum), and Jatamanshi (Nardostachys jatamansi). Monographs containing these standards were later released. Nevertheless, the formulations for these drugs were not included as standards in this version (Indian Pharmacopoeia, 1996a) since they were not available. The Indian Pharmacopoeia, Addendum 2005 (1996b) contained ten new drugs: ashwagandha, ginger, kalmegh, bhuiamla, bacopa, garcinia, and vasaka.Indian Pharmacopoeia (2007a) included a chapter on the general needs of herbs and criteria for herbal items, as well as 58 specific monographs, including 23 new monographs. The new monographs included Amalaki, Amra, Arjuna, Artemisia, Bhibhitaki, Bhringraj, Coleus, Gokhru, Gudmar, Guduchi, Haritaki, Kunduru, Kutki, Lasuna, Manjistha, Maricha, Punarnava, Sarpagandha, Shatavari, Shati, and Tulasi. contained nine new monographs: Kalmegh Dry Extract, Saunf, Ajwain, Anantmula, Daruharidra Roots, Daruharidra Stems, Senna Dry Extract, Senna Tablets, and Yasti Dry Extract. Addendum 2008 to the Indian Pharmacopoeia (2007b).Four new monographs were added to the Addendum 2012 (Indian Pharmacopoeia, 2010b): Bhuiamla Dry Extract, Gudmar Dry Extract, Kunduru Dry Extract, and Mandukaparani Dry Extract, increasing the Indian Pharmacopoeia (2010a) to 93 monographs in total. [3]

3:- CURRENT STATUS OF HERBAL DRUGS IN IP AND AYURVEDIC PHARMACOPEIA:-

As of April 1, 2014, the seventh edition of IP (2014a), consisting of four volumes, is now in force. Volume III covers standards for Herbal Drugs. Herbs & Herbal Products is a separate chapter on general requirements. The individual monographs are listed alphabetically. Important additions included a new general chapter on the DNA-based verification technique to rule out adulterants, with particular reference to quality criteria of herbs and herbal products.(4) The basic chapter on determining the essential oils' flash points was also included. A revised chapter on thin layer chromatography, including high-performance thin layer chromatography, was introduced into the Addendum 2016 (Indian Pharmacopoeia, 2014c). According to Rastogi, Pandey, Prakash, et al. (2015), a small number of the plants and herbal treatments included in IP are also utilized for veterinary applications.When adding the monographs of herbal drugs to IP, certain inclusion and exclusion standards were followed (2014a, 2014b, 2014c; Guidance Manual for Monographs Development of Herbs and Herbal Products including Phytopharmaceutical Drugs, 2016).

In other words, the herbs that are included should be known to have a history of use that demonstrates their medicinal or preventive usefulness in forming their safety profile. (5) In addition to meeting other inclusion requirements, they should be of public interest, commercially available, and have clearly defined botany. Herbal medications that are prohibited in India, out-of-date, and deemed inappropriate by the regulatory body and IP C are not included in IP. We've already evaluated IP's current state and upcoming issues (Parkas et al., 2016). Table 1 displays the collection of monographs on plants and herbal products in IP 2014, together with its Addenda for 2015 and 2016. [6]

4 :- REGULATORY ASPECTS :-

Establishing public trust in the therapeutic use of herbal medications requires standardization of the drugs and their formulations, stability, and safety. Globally, there are laws governing herbal pharmaceuticals in many

developed nations like the United States, Brazil, Australia, Canada, Germany, and emerging nations like Bangladesh, India, and Indonesia. Nevertheless, many nations still lack a regulatory framework. Nonetheless, different countries have varied legislative frameworks for manufacturing and marketing authorization. Herbal remedies are governed in India by the Drugs and Cosmetics Act 1940, First Schedule, and Rules 1945. The Drugs and Cosmetics Rules, 1945, Schedule T, Rule 157, details the good manufacturing practices for medicines that are Ayurvedic, Siddha, and Unani. Both the IPC and the Central Drugs Standards Control Organization are always working to establish standards for medicines and obtain approval (Kalaiselvan, Prakash, Kalaivani, et al., 2014; Prakash, Pandey, Gupta et al., 2016). The Drugs and Cosmetics Rules, 2015 have been notified by the Central Government to change the Drugs and Cosmetics Rules, 1945, following consultation with the Drugs Technical Advisory Board. This notification was sent out on November 30, 2015, via GSR 918€ (2015). The regulation outlines the legal prerequisites for the production and distribution of phytopharmaceutical medications. These regulations are to be enforced by the federal and state drug regulatory agencies. National Policy on Homoeopathy and Indian Systems of Medicine, 2002 claims that there are a lot of units in the major, medium, small, and tiny sectors. Drugs' quality, safety, and logical use have not all been established. Even though the Act and the majority of States have enforcement mechanisms in place, there is still much room for improvement in how these laws are put into practice. A significant portion of manufacturers are reluctant to use effective manufacturing practices. Although the process of preparing pharmacopoeial standards and formularies has accelerated, much work remains. There is absolutely no guarantee that the Indian Systems of Medicine & Homoeopathy medicine makers are adhering to pharmacopoeial norms and formulaAlthough most States have enforcement statutes in place and the Act provides for an enforcement mechanism, the execution of these laws falls well short of expectations. A significant portion of manufacturers are reluctant to use effective manufacturing practices. Although the process of preparing pharmacopoeial standards and formularies has accelerated, much work remains. There is absolutely no guarantee that the Indian Systems of Medicine & Homoeopathy medicine makers are adhering to pharmacopoeial norms and formularies.

The National Health Policy (2017) acknowledges the necessity of establishing a strong and efficient quality control mechanism for AYUSH drugs as well as standardizing and validating Ayurvedic medicines. The policy calls for bolstering and streamlining the drug regulatory framework, encouraging research, and growth in the pharmaceutical industry, creating synergy, and evolving a convergent strategy with other industries. The Indian Drug Regulatory Authorities consider the IP as a helpful regulatory document for the manufacturing, marketing, and quality control of medicines, including herbs and herbal products.. [7]

4.1 - Stability testing of herbal drugs:-

The ability of herbal medications and their formulations to remain stable both during and after marketing approval is a crucial consideration.A dependable and exacting technique for guaranteeing the safety and effectiveness of herbal drugs or products is to conduct critical systematic reviews and meta-analyses of the existing reports. Herbal medications must undergo thorough, methodical testing, much like synthetic drugs do in the current medical system, to guarantee constant therapeutic efficacy and safety over the course of their shelf

lives.(8) Drug regulatory organizations worldwide, including the US Food and Drug Administration and the European Medicines Agency, have established best practices for carrying out stability studies on herbal medications and goods, as well as dossiers. submittal of stability data is necessary in order to register a product. Additionally, stability studies on herbal medications and completed herbal formulations have been suggested by the WHO (2006). A recent study of the challenges, regulatory compliance, viewpoints, and stability testing of herbal medications was conducted by Bansal, Suthar, Kaur, et al. (2016). The Drugs and Cosmetics Rules, 1945 (notified vide GSR 918€ (2015), Ministry of Health and Family Welfare) in India have a provision requiring stability data for phytopharmaceutical drugs. [9]

5:-MATERIAL AND METHOD:-

Materials and Equipment

The following materials and equipment were used while carrying out this research work, such as: red onion, grinding machine, containers, distillation column as mechanism of essential oil extraction, Chloroform, recovery containers, reagents etc.

Sample Collection:-

The red onion (allium cepa) was purchased from fruit market in 25kg of red onion. After processing, 23.5kg was used for the extraction of the essential for the variety of the red onion.

Experimental Set-Up:-

Water bath and steam distillation used to conduct the experiment. The most common technique for separating and extracting essential oils from plants for use in natural products is steam distillation. This occurs when the volatile compounds in the plant material are vaporised by the steam, leading to their eventual condensation and collecting.

❖ **Experimental Procedure :-**

I. First took red onions and they grinded with the grinding machine.

II. Then take the grinded onions in 500 ml of glass beaker and measured the weight of it with the helpof weight machine.

III. Then add some water in the beaker and mix the grinded onions with the water

V. Then let the mixture come to room temperature and then add chloroform liquid in that mixture and mix it well and let the mixture stay for 5 to 10 minutes. The oil is soluble chloroform so they mix together.

VI. After that we can see two layers of water and the chloroform so separate the chloroform with thehelp of separating funnel.

VII. After that we have to do water bath to get the oil.

VIII. For water bath take 1 aluminum vessel and fill the container with distilled water to the required level then turn on burner and control the temperature near 60 °C to 80 °C. and heat it till 2 to 3 hours until u see the yellow-colored dense liquid and no smell of chloroform.

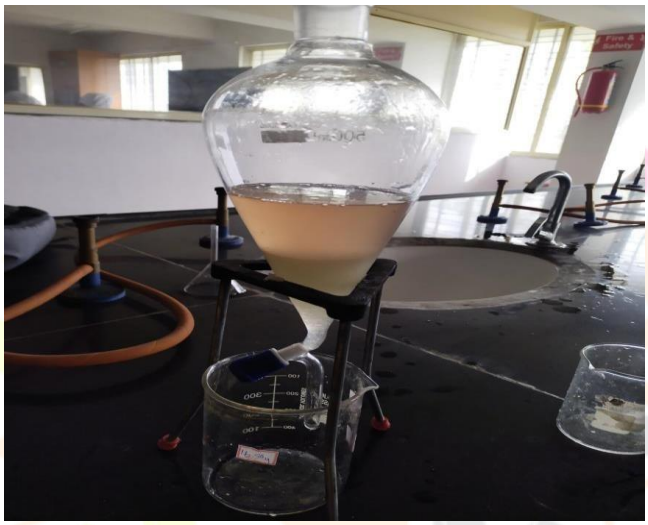
IX. Or we can do steam distillation to evaporate the chloroform and get oil.

PRACTICAL PROCEDURE:-

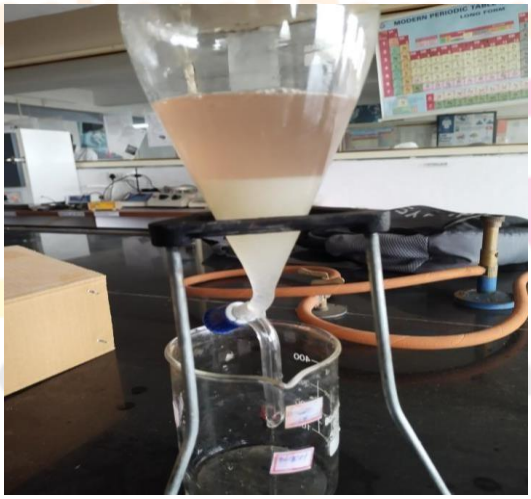
(Total 400 gm of paste of onion took)

(100 ml of chloroform per 400 gm past20**(**After the mixing onion paste and chloroform)

(After filtering the liquid, the rest of the onion)



(Separate the chloroform and water with the help of separating funnel22



(Separated liquid with oil)

(Water bath)23

MODULE 2 :-

1 TITEL :- MONOGRAPH

2:- DEFINITION:-

Herbal Monograph:- document whose purpose is to provide a scientific summary of all data available on the safety and efficacy of a herbal substance/preparation1 intended for medicinal use.(10)

Onion:-Cultivars of the onion (Allium cepa), and have purplish-red skin and white flesh tinged with red. (11)

RED ONION :-

Synonyms :- Allium ascalonicum L.

Biological Source :- Although Allium cepa L., better known as onions, was long believed to be a part of the Liliaceae family, more modern taxonomic systems place the genus Allium in the Amaryllidaceae family, subfamily Allioideae.With over 850 species, this genus is one of the largest monocot genera.
. [12]

Family :- Amaryllidaceae

Chemical constituents :- L-glutamic acid (16.35mg%), ammonium chloride (15.22mg%) and L-serine (10.93mg%). [13]Ascorbic acid contents are higher in red onion (28.34mg%) then in yellow onion (19.20mg%). [14]

Uses:-Reduce swelling and lung tightness related to asthma. [15]

3:-GEOGRAPHICAL DISTRIBUTION :-

3.1 Major Producing Countries in the World :-

China is the largest onion producer followed by India and grew 24.34 million tonnes of Onions during 2017 (Table 1). [16]

Countries That Produce The Most Onions (FAO)

Total Top 10 Countries		**176,463,494,766**	
Rank	**Countries**	**Pounds**	**% of Top 10**
1	China	55,041,349,811	31.19%
2	India	50,307,223,780	28.51%
3	United States	6,989,240,647	3.96%
4	Egypt	6,792,537,837	3.85%
5	Turkey	4,850,164,000	2.75%
6	Sudan	4,231,344,803	2.40%
7	Bangladesh	3,974,638,850	2.25%
8	Iran	3,923,026,491	2.22%
9	Brazil	3,432,339,809	1.95%
10	Pakistan	4,584,712,320	2.60%

3.2 Area and Production :-

Onion production in India can be broadly categorised into two phases –

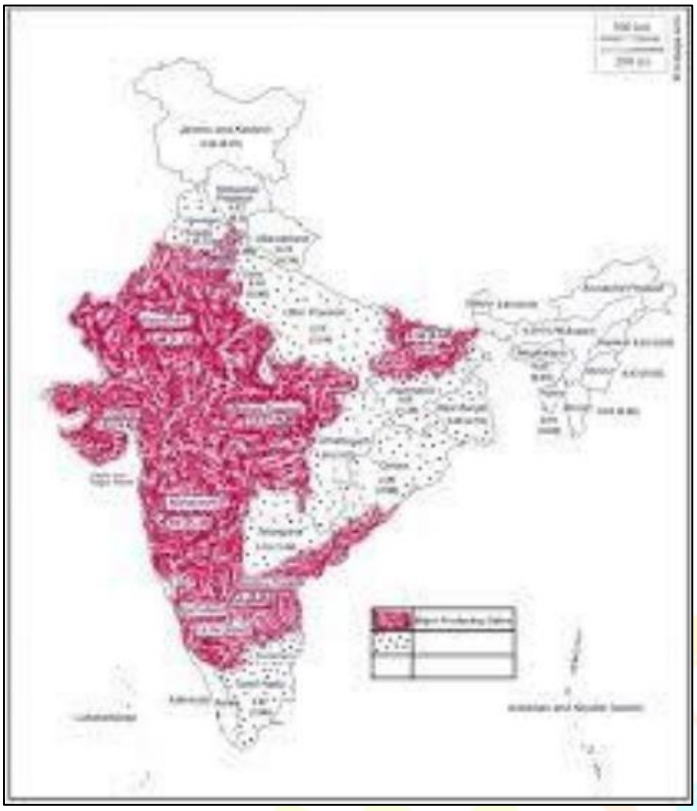
a) phase I with low Growth and low volatility in onion production continued till2002-03,

b)phase Characterized by high growth and high volatility in production which started with a Turnaround in onion

production after 2002-03 and continues tilldate. The trends in area, production and productivity of onion since 1981-82 arepresented in Figure 1; the first phase from 1981-82 to 2001-02 witnessed gradual increase in production Driven largely by area expansion. During this time, the area planted with onions increased from 0.25 million hectares to 0.49 million hectares, and the yield also doubled (see 2003–04). Nonetheless, the yield levels stayed constant at 10 MT/Hectare, or 100 quintals per hectare. All three production aspects experienced exponential increase after 2002–2003. After 2002–2003, onion productivity rose by almost 60% in ten years, leading to an area shift in favor of onions. Over a ten-year period, the area increased by more than twice as much as expected. In less than ten years, onion production has tripled as a result2002-03. Netting out for population growth, India's onion production increased from 4.6 Kg/person/year during biennium 2000-01 and 2001-02 to 15.2 kg/person/year in years 2013-14 and 2014-15. [17]

3.3 Major Producing States in India :

The major onion producing states in India are Maharashtra, Karnataka, Madhya Pradesh, Gujarat, Bihar, Andhra Pradesh, Rajasthan, Haryana and Telangana. Nearly 50–60% of onions produced nationwide are grown during the rabi season, with the remaining 40–50% being grown during kharif and late kharif. In the northern part of the country, onions are typically grown during the winter (rabi) season; however, in the southern and western regions of India, such as Karnataka, Andhra Pradesh, Tamil Nadu, Maharashtra, and Gujarat, they are grown during both the rabi and kharif seasons.From TE 2006–07 to TE 2015–16, the onion area in Bihar, Madhya Pradesh, and Maharashtra expanded rapidly, leading to a notable rise in onion production during that time.. [18]



Note: Figures in parentheses indicate onion area share in the country.

4:- IDENTIFICATION AND AUTHENTICATION

4.1 **Purpose of identification tests :-**

The **onion test** is a way of assessing the validity of an argument for a functional role for junk DNA. It relates to the paradox that would emerge if the majorityof eukaryotic non-coding DNAwere assumed to be functional and the difficulty of reconciling that assumption with the diversity in genome sizes among species. (19)

4.2 :- Macroscopic :-

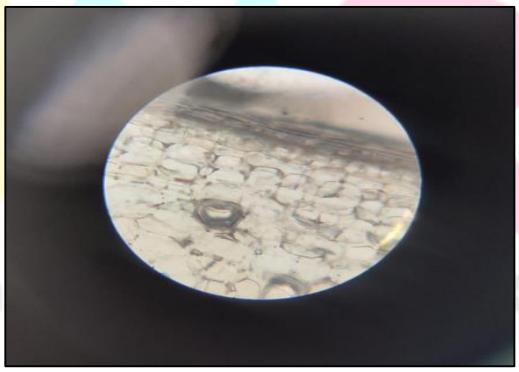


Fig 3 :- TS of onion

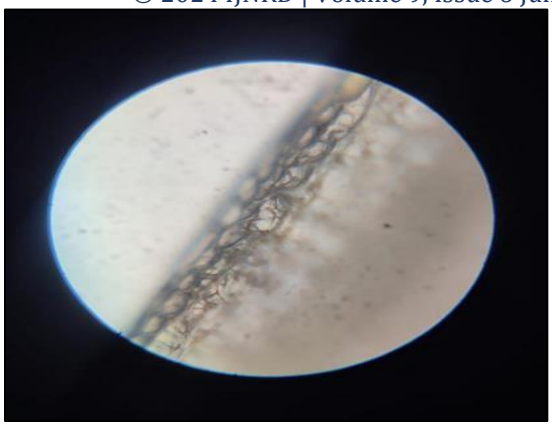


Fig 4 :- LS of onion

4.3 :- MICROSCOPIC CHARACTERISTICS :-

The cells of an onion skin are generally rectangular in shape and range in size from 0.25 to 0.4 millimeters in length. These cells lie close to each other with intercellular spaces between them. These cells are surrounded by distinct cell walls. [20]

4.4 :- CHEMICAL TEST :-

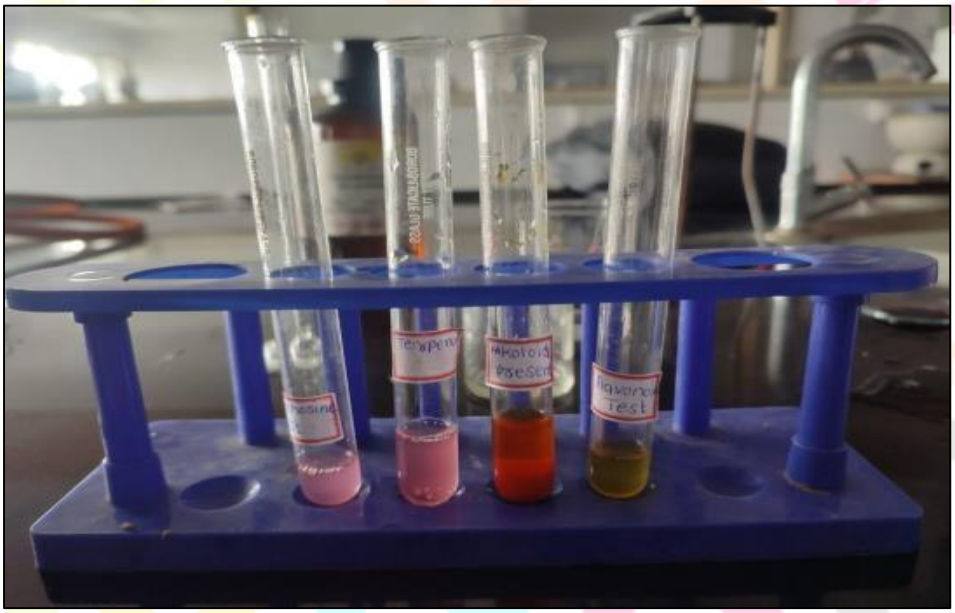


Fig No 5 :- Chemical test

5 :-TEST FOR CONTAMINATION AND IMPURITIES

Limit Test :-

- Limit testsare quantativive tests or semiquantative tests which are designed to detect and limit/ control small quantities of impurities present in the substance .
- All the limit tests that are prescribed in the pharmacopoeias are on the comparison of standard turbidity or color with that of the sample.
- Usually the limits are prescribed in parts per million (PPM).[21]

Quantitative Determination

1. **Limits of soluble matter**
2. **Limits of insoluble matter**
3. **Limits of non-volatile matter**
4. **Limits of moisture and volatile matter**
5. **Limits of residue on ignition**
6. **Loss on ignition**
7. **Ash values**[21]

1. Limit test for chlorides :-

- A solution of the substance is acidified with nitric acid , diluted to definite volume and treated with silver nitrate and opalescence so produced is compared with that of standard opalescence containing know sodium chloride solution's volume.
- **AgNO3 + Cl:- = AgCl + NO3**

• The presence of nitric acid stops silver hydroxide or carbonate precipitation, which could happen as a result of alkaline contaminants in the solution.

❖ **Principle :-**

- Silver nitrate and soluble chlorides are known to react to generate a precipitate of silver chloride that is insoluble in nitric acid, which is the basis for limits testing for chloride.
- The amount of silver choride generated, which in turn depends on the amount of chloride present in the test sample, causes the test solution to become turbid to varying degrees..
- The amount of chloride in the sample determines the opalescence that is created. [21]

2. Limit test for Sulphate :-

• It is dependent on the sulphate precipitating in the presence of barium chloride.

of potassium sulfate traces, ethyl alcohol, and hydrochloric acid.

- The turbidity produced is compared with that of turbidity produced by addition of the above reagent to a standard solution containing a definite quantity of potassium sulphate.

$SO_4 + BaCl_2 \rightarrow BaSO_4 + 2Cl$

- Presence of alcohol helps to super saturation .Hyrochloric acid is preventprecipitation due to barium carbonate which is also sparingly soluble in water .

3) Limit test for iron :-

• A predetermined dosage of the medication is dissolved in water and treated with thioglycolic and citric acids.A diluted ammonia solution is used to make it alkaline.

• The purple hue that results is contrasted with standard ferric ammonium sulphate that has undergone the same processing as the test solution.

• Citric acid is added to stop the iron from precipitating by ammonia (citric acid from a soluble complex). • Ferric ion is converted to ferrous ion by thiloglycolic acid.

Limit test for Heavy Metals :-

- All metals, with the exception of alkali and alkaline earth metals, such as copper, lead, mercury, arsenic, antimony, silver, etc., are colored by sulphide ions (H2S or Na2s) under certain circumstances..

• The color changes from brown to black depending on the amount of metal. • Method A

A material solution is brought to a pH of 3 to 4 by adding ammonia or acetic acid. A hydrogen sulfide reagent is then combined with the mixture, and the black color that results is compared to a reference color that has a known quantity of lead.

Limit test for Arsenic :-

- If any arsenic impurities are present in these tests, they are transformed to arsine gas (ASH3), which leaves a yellow stain on mercuric chloride paper upon contact..
- The stain's intensity is directly correlated with the amount of arsenic that is present. For comparison, a standard stain made from a specific quantity of arsenic is employed.

The presence of potassium iodide, stannous chloride, and hydrochloric acid (stannated hydrochloride) over arsenic-free granular zinc causes hydrogen gas to be produced in the solution. [21]

6. Assay of marker constituent :-

The onion, or Allium cepa, is one of the most extensively grown plants in the genus Allium and a member of the Amaryllidaceae family. Numerous chemical substances, including diallyl disulphide and diallyl trisulphide, as well as allicin, quercetin, and fisetin, are found in onions..[22]

7 Physicochemical Test :-

Di-n-propyl and dimethyl-n-propyl disulfides are the main ingredients in the oil. Typically, one pound of oil can flavor as much as five thousand pounds of fresh onions or roughly five hundred pounds of dehydrated onions.[23]

7.1 Water and alcohol :-

It is necessary to know details about different physico-chemical parameters such as color, temperature, acidity, hardness, pH, sulphate, chloride, DO, BOD, COD, alkalinity used for testing of water quality. heavy elements as Pb, Cr, Fe, and Hg,etc. Testing the water before using it for domestic, industrial, agricultural, or drinking purposes is crucial and crucial. It is necessary to examine water using many physicochemical parameters. Its physical characteristics, such as temperature, color, odor, pH, turbidity, and TDS, should be tested physically. Meanwhile, chemical tests should be carried out to determine its BOD, COD, dissolved oxygen, alkalinity, hardness, and other characteristics. Water should be analyzed for organic contaminants, such as pesticide residue, heavy metals, and trace metals in order to obtain more pure and high-quality water. It goes without saying that drinking water must pass all of these tests and have the necessary mineral content. **Other Test :-**

A. Swelling index

B. Bitterness values

C. Particle size

A. Swelling index :

These tasty vegetables are loaded with beneficial minerals. Not only can onions provide flavor to your favorite recipes. They are also very low in calories, almost fat-free, and full of nutrients that may help reduce inflammation in illnesses like arthritis..[24]

B. Bitterness values :-

The researchers found that after 30 minutes, the juice started to develop a strong, bitter taste. Subsequent investigation revealed that the onion generated nine distinct classes of sulfur-based substances in the juice, which they named allithiolanes..

C. Particle size :-

Given freeze-dried red onion powder with a particle size range of 0.45 to 0.90 mm as the starting material, the extraction pressure, temperature, time, and rate are as follows: 27.98 MPa, 42.18 °C, 216.6 minutes, and 0.483%. The final onion oil has a powerful taste of freshly chopped onions.[25]

10. Additional Information:-

• • Ayurvedic medicines come in two varieties: Siddha and Unani. 1.Conventional Medicine

2.Exclusive or patent medications

• The labeling standards are the same for both types of medications, with the exception that traditional medications are marketed under the same name as specified in reputable books, whereas proprietary or patent medications are offered under a specific brand name.

Labelling Requirements for Indian Market

All ayurveda, siddha, and unani medicines ought to be labeled with prescribed information in an enduring ink label or container.A complete description of all contents, including their botanical names, usage forms, and amounts of each ingredient, should be prominently posted on the container or box containing medications. A mention of the method Authoritative book should also be made in the case of classical medicines.A second list of ingredients should be produced, packed, and labeled with a reference if the list of ingredients is too long to fit on the label.A medication intended for internal use should be labeled with the phrase "Caution: To be taken under medical supervision" if it contains any ingredients listed in Schedule E(1). [26]

Other Requirements:-

In addition to the information already stated, a medication's label or container needs to have the following details printed on it or permanently inscribed on it:

• The drug's name, i.e., the same name as used in reputable texts for traditional treatments and the brand name for medications covered by patents or private rights

The following elements must be present:

• Net Content, such as precise weight, volume, or numbers
• Manufacturer's name and address
• Manufacturing License Number, also known as Mfg. Lic. No. or M.L.
• Batch Number, Batch or Lot Number, Lot No. or Lot
• Manufacturing Date and Expiration Date
• The terms "Ayurvedic Medicine," "Siddha Medicine," or "Unani Medicine"
• "FOR EXTERNAL USE ONLY." When referring to medicine intended for external use, the phrase "Physicians sample." "Not for sale" if given away for free

Labeling Requirements for Export

The following details should be stated along with the requirement of the importing country when adopting labeling requirements for export purposes in order to comply with the requirements of the country to which the drug is to be exported.

The following information should be included: the name of the Ayurvedic, Siddha, and Unani medication (single or compound formulations); the manufacturer's name, address, and license number; the batch or lot number; the date of manufacture; and the best before date

• Primary components, in case the importing nation requests them;
• For export

Labels on packages or containers containing Ayurvedic, Siddha, and Unani single or compound drugs that are not listed in the First Schedule or Schedule E-(I) must have a code number that has been approved by the Licensing Authority if the consignee (importing agent) requests that the manufacturer's name and address not be displayed. (26)

❖ CONCLUSION :-

A physical and chemical analysis of the essential oil from onions (Allium cepa) revealed that the oil contains beneficial elements that are therapeutic for human health. The richness of its essential oil is unmatched by any

other oil obtained from other plants. It can also be used as a starting point for the synthesis of other materials to make medications and other medical supplies.Onion oils are very good for hair development because they feed the roots of hair. Additionally, it has a large amount of antioxidants, which help keep the scalp free of

both dandruff and hair loss.The essential vitamins, minerals, and antioxidants act as a conditioner to maintain hair's smoothness and encourage hair growth in addition to helping to stop hair loss.Additionally, because of its antimicrobial.

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