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## Formulation of mixed variety of lotion prepared by *Thuja occidentalis*- Q and *Allium cepa*- Q in definite proportion

**Thummar Ishan, Dr. Monimala Pramanick, Dr. Suraj Singh and Dr. Poorav Desai**

**Abstract**

**Background:** Through this research project preparing the mixed variety of *Allium cepa* and *Thuja occidentalis* lotion with the aqueous base.

**Methodology:** In this process preparing the Lotion from Prepared *Thuja occidentalis*- Q and Prepared *Allium cepa*- Q mother tincture in base line sample of aqueous solution as drug and vehicle ratio of (1: 9). Samples were passed under the UV- Visible spectrophotometer (Double beam) and FTIR (Fourier-transform infrared spectroscopy).

**Result:** While sample passing under UV- visible spectrophotometer, maximum absorption of *Allium cepa* - Q is 0.992 at 410 nm, *Thuja occidentalis*- Q is 0.995 at 571 nm and *Allium cepa* lotion is 0.999 at 554.00 nm, *Thuja occidentalis* lotion is 0.999 at 503 nm, Mixed variety of *Allium cepa* and *Thuja occidentalis* lotion is 0.998 at 476 nm. On other hand, In, FTIR the Maximum transmission of *Allium cepa*- Q at the wavelength of 3364.08  $\text{cm}^{-1}$ , whereas the Maximum transmission of *Thuja occidentalis*- Q at 3346.47  $\text{cm}^{-1}$ , Maximum transmission of *Allium cepa* lotion at the wavelength of 3346.83  $\text{cm}^{-1}$ , Maximum transmission of *Thuja occidentalis* lotion at the wavelength of 3297.39  $\text{cm}^{-1}$  and Maximum transmission of Mixed variety of *Allium cepa*- Q and *Thuja occidentalis*- Q lotion at the wavelength of 3218.41 3218.41  $\text{cm}^{-1}$

**Conclusion:** Formulation of mixed variety of *Allium cepa*- Q and *Thuja occidentalis*- Q lotion gives a good result in quality control done by the UV- visible spectrophotometer and FTIR (Fourier Transform infrared Spectroscopy).

**Keywords:** *Thuja occidentalis*, *Allium cepa*, FTIR

**Introduction*****Thuja occidentalis***

St. John's Wort is the common name for the perennial herb *Hypericum perforatum* L. (Hypericaceae). Native to eastern North America, *Thuja occidentalis*, sometimes known as Arbor vitae or white cedar, is cultivated in Europe as a decorative tree [1]. Native Canadian Indians discovered the plant's medicinal properties for the first time in the 16th century. expedition and was discovered to be successful in treating scurvy-related weakness [2]. *Thuja occ* has been used to treat rheumatism, enuresis, cystitis, psoriasis, uterine carcinomas, and bronchial catarrh in traditional medicine [3-6]. These days, homoeopathy primarily employs it as a mother tincture or dilution [7, 8]. This medicinal plant works best when combined with other immune-suppressing plants including *Echinacea purpurea*, *Echinacea pallida*, and *Baptisia tinctoria*.

Additionally, plant is employed as an adjuvant to antibiotics in cases of severe bacterial infections such as bronchitis, angina, pharyngitis, otitis media, and sinusitis as evidence-based phytotherapy [9, 10]. [11, 12]. However, the majority are outdated or written in German. Several reviews and monographs discuss the botany, chemical make-up, some pharmacological qualities, and use of this herbal product in the treatment of the common cold [3, 13-17].

As a result, our goal was to put up a current, thorough, and evidence-based assessment of *Thuja occ* that would cover its botanical description, phytochemistry, *in vitro* and *in vivo* pharmacology, safety, and efficacy. For this, MEDLINE databases were examined, and producers of products containing *Thuja* were approached for more information or unpublished data.

**Botanical Description**

North America is where *Thuja occidentalis* was first grown for cultivation. It is a natural European tree that can grow up to 15-20 metres in height.

It has flattened branches and twigs in one plane, flattened coniferous pyramidal characteristics, and tiny scale-like leaves (3). The leaves are green throughout the entire year, with the Where resin glands also live on the bottom side, the colour green is brighter. The seeds are found on tiny, 1-2 cm long green to brown coniferous pins.

### **Allium cepa**

Since ancient times, the onion (*Allium cepa* L.) has been esteemed as both a food and a medicinal plant. It is a vegetable bulb crop that is known to most civilizations and is enjoyed all over the world. Its cultivation is second only to that of the tomato (FAO, 2012).

It is a short-lived horticultural crop planted at low latitudes. Due to its highly regarded flavour, scent, and distinctive taste as well as the therapeutic benefits of its flavour compounds, it is referred to as the "Queen of the Kitchen". Throughout the year, onions are used in a variety of dishes, including curries, as spices, in salads, as a condiment, and when boiled or baked with other vegetables. Additionally, it is utilised in a variety of processed foods, including pickles, powder, paste, and flakes, and it is known for its medicinal values.

### **Botanical Description**

The enormous *Allium* genus is extensively dispersed throughout temperate zones and contains numerous wild edible species, only a small portion of which are economically farmed in the northern hemisphere. The region of origin is said to be central Asia, and the Mediterranean is thought to be the secondary origin region. There are more than 780 species of allium, with a wide range of physical characteristics. The onion has 16 chromosomes (2n). It has been categorised at the following hierarchical levels: (Sunil Pareek,\* Narashans Alok Sagar, Sunil Sharma, and Vinay Kumar, 2017)

- **Kingdom:** Plantae
- **Subkingdom:** Tracheobionta
- **Super division:** Spermatophyta
- **Division:** Liliopodia
- **Subclass:** Liliales
- **Order:** Liliaceae
- **Genus:** *Allium*
- **Species:** *Allium cepa* L.

Moisturizers are emulsions that can be either oil-in-water or water-in-oil. The decision is predominantly directed by reasonable contemplations like simplicity of use and customer discernment (Wibowo and Ng, 2001). The oil-in-water emulsions, which are less tacky on application, prevail on the lookout and is the decision for our review. It are utilized to Emulsify specialists settle the oil in water combination. The most well-known kind of emulsifier are surfactants, which decline the interfacial pressure between the two stages. The real assembling system is straightforward and comprises of blending the oil and water stages together. The accompanying advances show how the salve is made.

1. Intensity and blend the fluid and oil stages independently
2. Consolidate the two stages into one bunch
3. Perform post treatment changes (for example decline drop size utilizing a sonificator, followed by a colloid factory and homogenizer). As we will see later, drop size assumes a part in certain properties.

Therefore through this research work we standardized the formulation of mixed variety of lotion which was prepared by Prepared *Thuja occidentalis*- Q and *Allium cepa*- Q

### **Methodology**

The main embodiment of the present invention is preparing standard *Azadirachta indica* Mother Tincture in aqueous base in a definite proportion of drug and vehicle ratio i.e 1:9 as per the rules and regulations given by Pharmacopoeia. Whereas, 1 part is taken as drug and remaining 9 part is taken as vehicle. On other hand for preparation of 1<sup>st</sup> dilution of *Azadirachta indica* lotion, measurement were taken as 1 part of *Azadirachta indica* lotion in 9 parts of aqueous base solution. Quantitative analysis and qualitative analysis of both the formulation were done by FTIR and UV- visible spectrophotometer.

### **Formulation prepared by**

1. *Allium cepa*- Q
2. *Thuja occidentalis*- Q
3. Distilled water

### **Site of study**

Centre of Research and Development of Parul University CR4D

### **Investigational tool**

UV- Visible spectrophotometer  
FTIR

### **Drug and Vehicle Ratio**

Drug and vehicle ratio is (1:9)

Prepared *Allium cepa*- Q

Prepared *Thuja occidentalis*- Q

### **Medicinal product**

Prepared *Allium cepa*- Q

Prepared *Thuja occidentalis*- Q

### **Procedure**

For such preparation of formulation following steps should be taken; such as;

1. Measurement
2. Mixing
3. Filling
4. Labelling

### **Measurement**

The drug and vehicle should be taken as

Drug- 2 mg w/v

Vehicle- 9 ml v/v

*Thuja occidentalis* were prepared as per the rules and regulations given by the HPI (Homoeopathic Pharmacopoeia of India)

a). *Thuja* pulp- 100 gm

Distilled water- 135 ml

Strong alcohol- 884 ml. (1 liter volume)

b). *Allium cepa*- Q were prepared as per the rules and regulations given by old method; such as;

### **Class- II**

Drug vehicle ratio is (3:2)

Drug- 30 ml w/v

Alcohol- 20 ml v/v

### **Mixing**

For preparation of formulation first take 1 part of *Thuja occidentalis*- Q and 1 part of *Allium cepa*- Q in 9 parts of Distilled water (aqueous base)

**Filling**

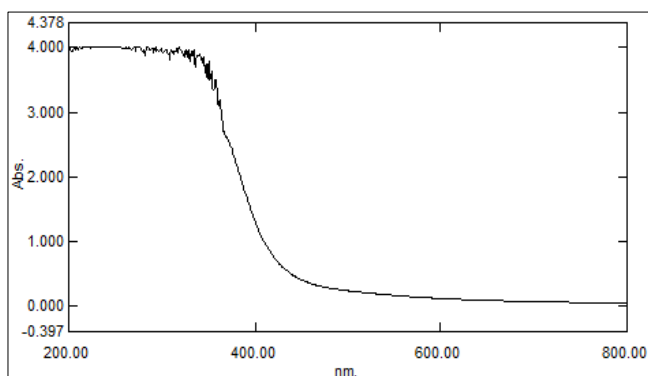
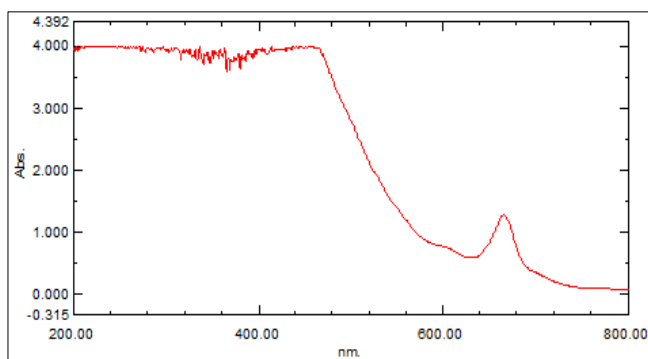
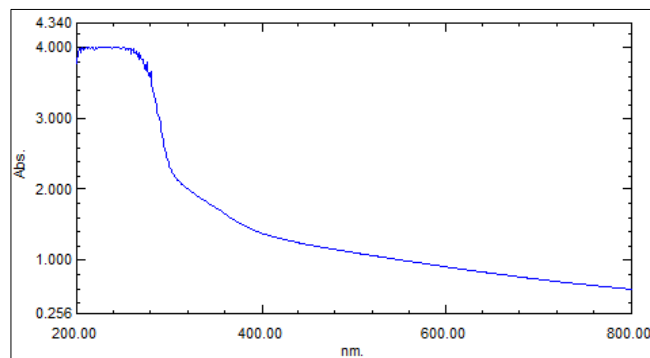
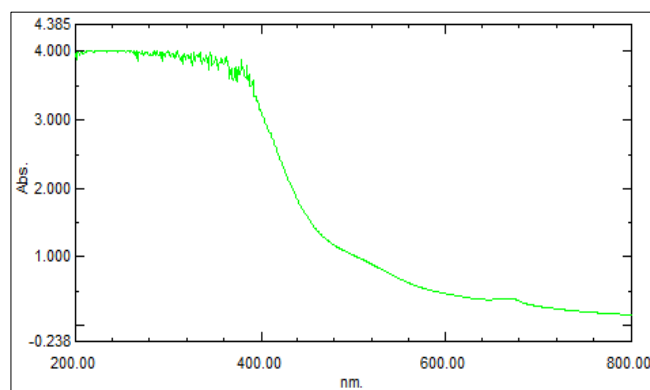
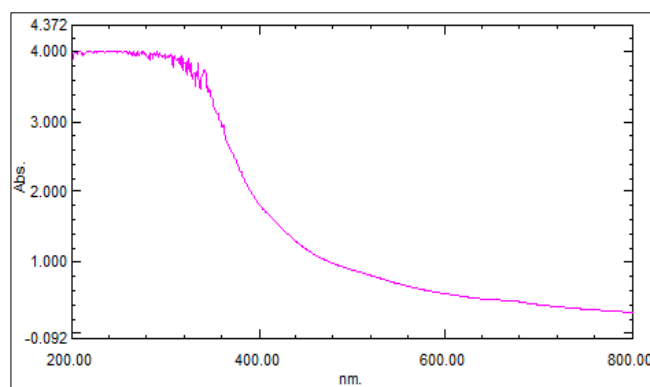
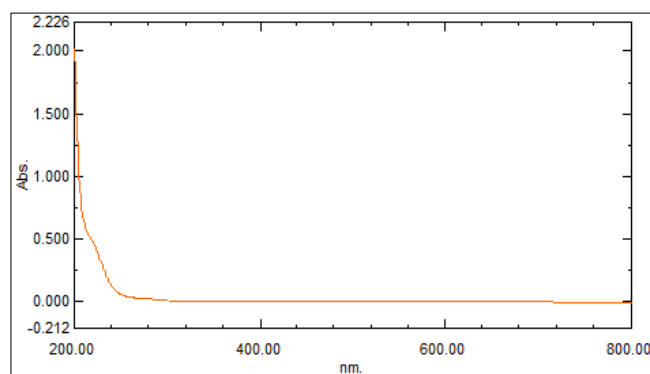
Prepared formulation of mixed variety from *Thuja occidentalis*- Q and *Allium cepa*- Q was filled in the hard glass bottles which should be clean and sterile first.

**Labelling**

Pate label on the body of hard glass bottle which contains Drug name, manufacturer date, Indications, quantity of drug and vehicle, overall.

**Result**

While sample passing under UV- visible spectrophotometer, maximum absorption of *Allium cepa* - Q is 0.992 at 410 nm, *Thuja occidentalis*- Q is 0.995 at 571 nm and *Allium cepa* lotion is 0.999 at 554.00 nm, *Thuja occidentalis* lotion is 0.999 at 503 nm, Mixed variety of *Allium cepa* and *Thuja occidentalis* lotion is 0.998 at 476 nm. On other hand, In, FTIR the Maximum transmission of *Allium cepa*- Q at the wavelength of  $3364.08\text{ cm}^{-1}$ , whereas the Maximum transmission of *Thuja occidentalis*- Q at  $3346.47\text{ cm}^{-1}$ , Maximum transmission of *Allium cepa* lotion at the wavelength of  $3346.83\text{ cm}^{-1}$ , Maximum transmission of *Thuja occidentalis* lotion at the wavelength of  $3297.39\text{ cm}^{-1}$  and Maximum transmission of Mixed variety of *Allium cepa*- Q and *Thuja occidentalis*- Q lotion at the wavelength of  $3218.41\text{ cm}^{-1}$

**UV- visible spectrophotometer Analysis****Fig 1:** *Allium cepa*- Q**Fig 2:** *Thuja occidentalis*- Q**Fig 3:** *Allium cepa* lotion (Aqueous base)**Fig 4:** *Thuja occidentalis* lotion (Aqueous base)**Fig 5:** Mixed variety of *Thuja occidentalis* and *Allium cepa* lotion (Aqueous base)**Fig 6:** Ethanol (Base line sample)

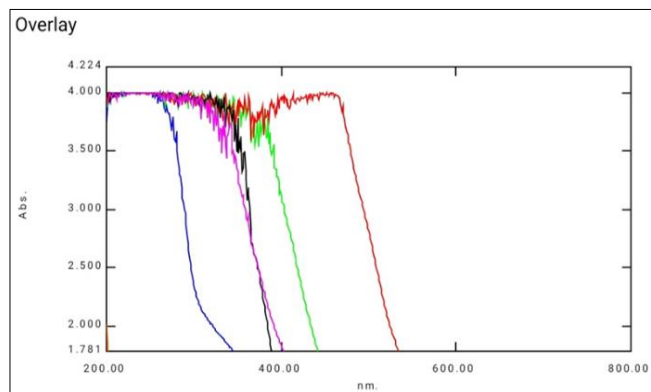


Fig 7:

### Conclusion

Formulation of mixed variety of *Allium cepa*- Q and *Thuja occidentalis*- Q lotion gives a good result in quality control done by the UV- visible spectrophotometer and FTIR (Fourier Transform infrared Spectroscopy).

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