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Preparing *Secale cornutum* glycerol with different drug and vehicle ratio and their quality assessment by UV-VIS

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Abstract

Background: Through this research work prepared glycerol by homoeopathic mother tincture *Secale cornutum* in drug and vehicle ratio i:e (1:9) (1:4), which undergoes into quality assessment by UV- VIS spectrophotometer.

Methodology: The preparation of homoeopathic medicated glycerol is done by *Secale Cornutum* in drug and vehicle ratio between (1:9) (1:4) without any heating. There is no addition of any chemical preservatives. The quality assessment is done by UV-Visible spectroscopy (Double beam).

Results: After analysis done by UV-Visible spectroscopy, absorbance value of *secal cornutum* Q is 0.998 at 700.00 nm, *Secale cornutum* glycerol (1:4) is 0.895 at 400.00 nm, *Secale cornutum* glycerol (1:9) is 0.573 at 400.00 nm, glycerol is 0.003 at 400.00 nm.

Keywords: *Secale cornutum* glycerol, drug, vehicle ratio, UV-VIS

Introduction

Glycerol (1,2,3-propanetriol or glycerine), a natural atom secluded by warming fats within the sight of debris (to produce cleanser) as soon as 2800 BC ^[1], is a modern compound with several applications (Figure 1). Since the last part of the 1940s, and following the revelation of engineered surfactants, glycerol has been created from epichlorohydrin got from propylene (and in this way from fossil oil) as huge synthetic organizations determined a glycerol deficiency and started its manufactured production ^[2]. Today, be that as it may, glycerol plants are shutting and others are opening that utilization glycerol as an unrefined substance (counting for the development of epichlorohydrin itself) ^[3] as a consequence of the huge excess of glycerol that is shaped as a result (10% in weight) in assembling biodiesel fuel by transesterification of seed oils with methanol. To outline the pattern, the worldwide glycerol market was 800 000 tons in 2005 with 400 000 tons from biodiesel in contrast with 60 000 tons just in 2001 ^[4].

Over the course of the past ten years, biodiesel has arisen as a suitable fuel and as a fossil diesel added substance to supplant sulfur, whose content is logically brought down as per more tight ecological regulation. Until the late expansions in oil costs, high creation costs made biofuels unfruitful without government sponsorships. Be that as it may, the rising creation of biodiesel isn't misleadingly maintained and is anticipated to spread and increment, as biodiesel gives adequate benefits to justify subsidy ^[5]. Other than the conclusion of creation plants, industry responded to this present circumstance by beginning examination to track down new utilizations of glycerol as a minimal expense feedstock for utilitarian subordinates either for mass utilization, for example, added substances for concrete ^[6], or on the other hand as a forerunner of esteemed fine substance.

Secale cornutum

This ailing grain, which I will call ergot, is viewed as in the ear of the rye, in more prominent or less amount, as per the season, and its circumstance. Its structure is customarily abnormal furthermore, long; it extends much from the glume; is bigger in the center than at the limits, which are in some cases gruff, furthermore, in some cases pointed. It is only here and there round in its entirety length, there being for the most part three points, and certain longitudinal queues, reaching out from one finish to the next.

In many grains, especially the biggest, there are little pits, assumed by some to be occasioned by bugs, by others by the sun. Its outside tone is violet of various levels of power, which encases a dull white substance of a firm consistence, from which the outer coat doesn't separate itself even after lengthy bubbling.

Materials and Methodology

Type of study: Analytical study

Site of study: CR4D Department

Duration of study: 3 months

Sample: Homoeopathic medicated glycerol.

Tools: UV-VIS (spectroscopy) and FTIR (Fourier Transform infrared spectroscopy)

Materials: Beaker (100 ml capacity), pipette 10 ml capacity, Glass rod, measuring cylinder (100 ml capacity)

Medicinal products: *Secale cornutum*- Q was purchased from GMP Certified Pharmaceutical Pvt. Ltd. (SBL), Glycerine Purchase from Chemdyes Corporation Laboratory chemicals, Industrial chemicals, solvents, metallurgy chemicals, food preservatives, filter papers, safety Goods.

Vehicle

Glycerol

Standard sample

Secale cornutum – Q

Main sample

Secale cornutum glycerol (1:4)

Secale cornutum glycerol (1:9)

Control sample:

Glycerine

Steps to follow.

Sterilization: Cleansing of all the equipment's by strong alcohol with drying by Hot air oven for 15 minutes.

Measurement: Take appropriate amount of Medicine and vehicle with pipette (10 ml capacity) in the clean, dry

beaker. Like; Medicine

Secale cornutum glycerol in (1:4)

Secale cornutum Q- 5 ml

Glycerol - 20 gm

Secale cornutum glycerol in (1:9)

Secale cornutum Q- 5 ml

Glycerol - 45 gm

Mixing

Apply gentle mixing the given formulation by glass rod until and unless if homogeneous mixture formed.

Filling

The prepared formulation of Homoeopathic medicated glycerol should be filled in the hard glass bottle. Which should be clean, sterile and non-coloured bottles.

Storage

The given formulation should be preserved into the hard glass bottle, which should be away from dampness, sunlight, strong smelling bottles and cool, dark place.

Labelling

Paste the label on the bottom of hard glass bottle as;

- Name of formulation
- Name of Medicine with quantity
- Name of vehicle with quantity
- Drug and vehicle ratio
- Manufacture Date
- Manufacturer By
- Indications
- Storage

Analysis

The prepared formulation of *secale cornutum* glycerol in all the ratio (1:4) (1:9), which were categorized into three main groups. Such as; Standard group, Main sample group and Control group. Around (3-4) ml of samples from each group were placed in the sterile, dry cuvette in UV-VIS Chamber.

Results

Absorbance value of *secale cornutum* Q is 0.998 at 700.00 nm, *Secale cornutum* glycerol (1:4) is 0.895 at 400.00 nm, *Secale cornutum* glycerol (1:9) is 0.573 at 400.00 nm, glycerol is 0.003 at 400.00 nm.

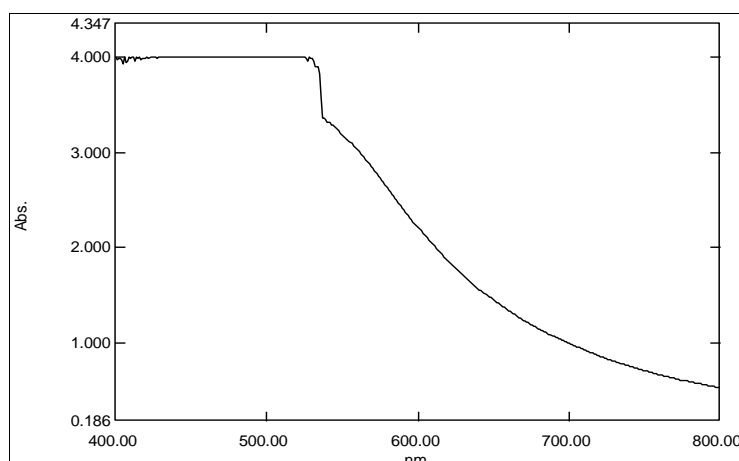


Fig 1: Absorbance capacity of *secale cornutum* Q

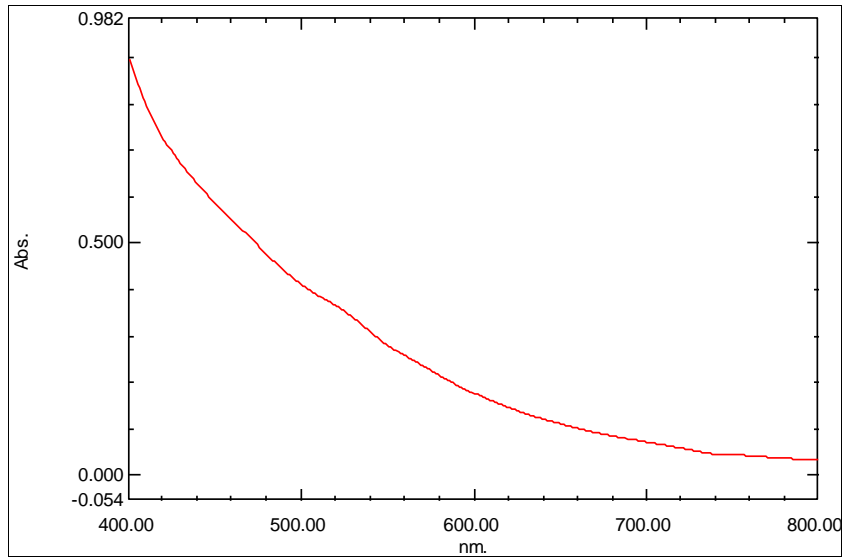


Fig 2: Absorbance capacity of *Secale cornutum* glycerol (1:4)

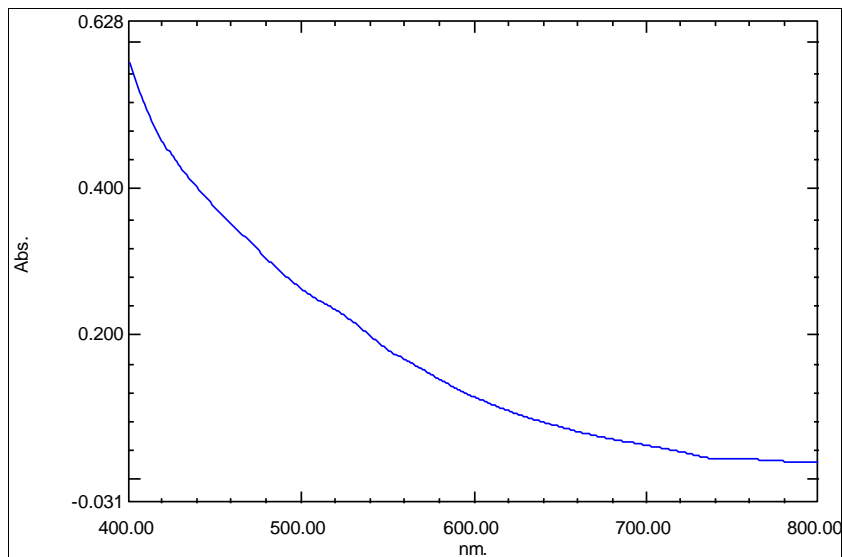


Fig 3: Absorbance capacity of *Secale cornutum* glycerol (1:9)

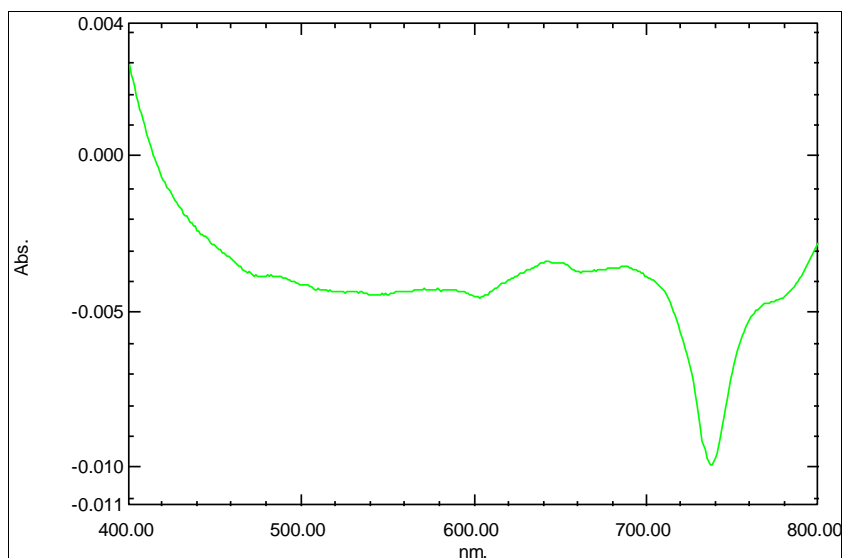


Fig 4: Absorbance capacity of glycerol

Conclusion

The homoeopathic medicated glycerol prepared by *Secale cornutum* mother tincture in different drug and vehicle ratio

(1:9) and (1:4) gives better results in UV-Visible spectroscopy.

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Conflict of interest

No such

References

1. Hunt JA. Pharm. J. 1999, 263, 985.
2. See the recent report from Frost & Sullivan: R&D Creating New Avenues for Glycerol; August 4, 2006. available online at <https://www.frost.com/prod/servlet/market-insight-top.pag?docid=77264824>.
3. The US agribusiness company Archer Daniels Midland recently announced plans to make propylene glycol from glycerol instead of propylene oxide. Dow Chemical closed its glycerol plant in Texas early this year when Procter & Gamble Chemicals shut down a natural glycerol refinery in England. See: a) M. McCoy, Chem. Eng. News. 2006;84(6):7; b) M. McCoy, Chem. Eng. News. 2006;84(2):32.
4. As of July 2006, pure glycerol was sold at 600–800 E/ton while crude glycerol of high quality obtained by biodiesel production was sold at 600–700 E/ton with glycerol currently priced at around 850 USD/ton. At prices approaching 770 USD/ton, glycerol becomes a significant platform chemical. If, as anticipated, biodiesel production grows to 3.23 million tons worldwide, an extra 323 000 tons of glycerol would reach the market thus rendering glycerol a readily available commodity; c2006.
5. Biodiesel yields a net energy balance ratio of 1.93 (i.e. 93% more energy produced than the energy invested in its production, whereas ethanol yields only 25% more energy): J. Hill, E. Nelson, D. Tilman, S. Polasky, D. Tiffany, Proc. Natl. Acad. Sci. USA. 2006;103:11-206.
6. Crude glycerol from biodiesel production is an excellent additive for concrete, enhancing its resistance to compression and grinding and lowering its setting time. Mechanical tests carried out on “clinker” (the cement precursor which is mixed with gypsum to yield the concrete) samples doped with crude glycerol show, in all cases, that raw glycerol imparts better mechanical and chemical properties compared to those samples doped with commercial additives, including pure glycerol. Tests on an industrial scale using trucks of crude glycerol confirmed the results on the laboratory scale, and commercialization of cement added with biodiesel glycerol started in late 2006. M. Rossi, M. Pagliaro, R. Ciriminna, C. Della Pina, W. Kesber, WO2006051574, 2004.
7. Prescott O. A Dissertation on the Natural History and Medical Effects of Secale Cornutum, or Ergot. The Medical and Physical Journal. 1814 Aug;32(186):90.