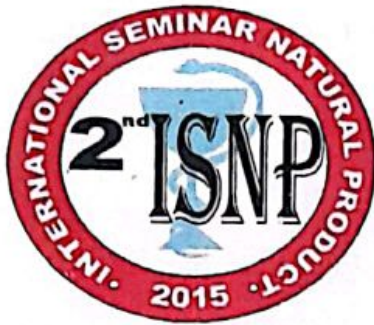


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The 2nd ISNP

Traditional medicines :

*"A Challenge in drug discovery from
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A Challenge in drug Discovery from Natural resources”**

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PREPARATION OF ULCER OINTMENT FROM MENIRAN (*PHYLLANTHUS NIRURI* L.)

HERB EXTRACT

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ABSTRACT

Meniran herb (*Phyllanthus niruri* L.) is widely used by most society as a traditional medicine. Chemical contents in Meniran herb are phenol, flavonoid, lignan (filantin, hipofilantin), resin, tannin, saponin, potassium, glycoside which are effective as antibacterial and anti-inflammatory. The aim of the study is to prepare an ulcer ointment of Meniran herb (*Phyllanthus niruri* L.) extracts. This is a descriptive study conducted in laboratory. The sample used in this study is Meniran herb collected from Manado. Meniran herbal extracts obtained by maceration process using ethanol 96% as the solvent. Thick extract is then made into ointment preparation using ointment base which can be washed with water consist of stearyl alcohol, white petroleum jelly, sodium lauryl sulfate, propylene glycol, methyl paraben, propyl parabens. Some testing done to the preparation that is homogeneity test, organoleptic test, particle size measurement, pH test, adhesion test, and spread ability test. The data compared with the requirements of each test. The results show that the ulcer ointment of Meniran herb extract has a semisolid form, greenish-black colour, characteristic odor of meniran, pH 5, dispersion area 5.7 cm, adhesion strength for 4 seconds, homogeneous and the particle size larger than the comparison ointment, so it can be concluded that the ointment of herbal extracts meniran meet the requirements.

Keywords : Meniran herb extract, ointment washable base

INTRODUCTION

A. Background

Meniran Herbs (*Phyllanthus niruri* L.) has long been used by people as a traditional medicine, to treat ulcer disease in a way, boiled herbs meniran, after cold used for washing ulcers (1). Meniran Herbs contain chemicals that lignin compounds (filantin and hipofilantin), resin, tannins, saponins, phenols, glycosides and flavonoids which acts as an antibacterial, anti-inflammatory, antioxidant (2).

Based on research (3), a compound produced from herbal extracts meniran by using ethanol 96% are flavonoids, alkaloids, saponins, phenols, lignans, and glycosides, and the concentration of 288-480 mg/ml to inhibit the growth of *Staphylococcus aureus*. *Staphylococcus aureus* is a gram-positive bacterium that can cause human infections such as boils, food poisoning, burns and wound infection (4). A boil is a skin infection such as a small bump, reddish enlarged and filled with pus, with yellowish-white head in the middle.

Ulcers can also be interpreted as a local infection in the skin, hair follicles initially infected, because of friction, irritation, and lack of body care (5). Many pharmaceutical products on the market that can treat boil, such as ointment preparations (6).

Ointments are semisolid dosage which is lubricated and is used to treat. Ingredients must be soluble or dispersed homogeneously in a suitable ointment base (7). Ointment base which can be washed with water, is one of the suitable ointment base, because the ingredients can be better absorbed by the skin (8).

Based on above description explained that herbs meniran has benefits in curing boil, the authors are interested in studying the manufacture of pharmaceutical preparations containing herbal extracts meniran in ointment dosage forms.

Is herbal extracts meniran can be made preparations ointment meet testing requirements. The purpose of this research is to make an ointment preparation

boils of herbal extracts meniran accordance with the testing requirements ointment.

RESEARCH METHODS

Tools used:

Mortar and pestle, parchment paper, measuring cup, funnel, Erlenmeyer, jars, stirring rod, Sudip, cup, Microscope, Object glass, water bath, Rotavapor, Scales, Thermometers, universal pH, Child scales, flannel fabrics.

Materials used:

Ethanol 96%, stearyl alcohol, vaseline album, Herba meniran, sodium lauryl sulfate, Propylene Glycol, Methylparaben, Propylparaben

1. Reference Formula (4).

Methyl Paraben	0.25 grams
Propyl Paraben	0.15 grams
Sodium laurylsulphate	10 grams
Propilenglikol	120 grams
Stearilalkohol	250 grams
White Vaseline	250 grams
Pure water	370 grams
Total	1000 grams

2. The design formula

Active substance	30%
Ointment base ad	10 grams
Ointment base consisting of:	
Methylparaben	0.025%
Propyl paraben	0.015%
Sodium lauryl sulfate	1%
Propilenglikol	12%
Stearyl alcohol	25%
White Vaseline	25%
pure water	36.96%

3. Weighing

Scaling to 8 tubes each 10 grams
For tube 8 @ 8 x 10 grams = 80 grams
Meniran leaf extract = 30% x 80 grams = 24 grams
Ointment base = 80-24 grams = 56grams
Ointment base consisting of:
Methylparaben 0.025% x 56 grams = 0.014 grams
Propyl paraben 0.015% x 56 gram = 0,008 grams
Sodium lauryl sulfate 1% x 56 grams = 0.56 grams
Propilenglikol 12% x 56 grams = 6.72 grams

Stearyl alcohol 25% x 56 grams = 14 grams

White Vaseline 25% x 56 grams = 14 grams

Pure water 36.96% x 56 grams = 20.697 grams

4. The reason for the addition of

- Meniran herbal extracts as active ingredients containing compounds flavonoids are useful as antibacterial with a concentration of 30% w / w, which is obtained from the conversion of 300 mg / ml of herbal extracts meniran on research (3).
 - Ointment base used is an ointment base which can be washed with water, basic ointment can work systemically, so release active ingredients quickly absorbed.
 - Sterile alcohol is used to improve the stability of the ointment. vaseline white as a carrier, occlusive cover, which inhibits evaporation normal moisture from the skin. Sodium laurylsulphate used as emulsifiers (0.5% -2.5%). Propilenglikol used
 - As the solvent in the emulsion (5% - 80%). Methylparaben is used as a preservative to the water phase (0.02% -0.3%). propyl paraben used as a preservative for the oil phase (0.01% -0.6%). Water is used as a carrier for the water phase (9).
- ### 5. Preparation of herbal extracts meniran:
- Herba meniran washed with water, then dried with chopped aerated in a place not exposed to direct sunlight.
 - The dried herbs meniran weighed 500 grams and put in a jar, press the stir until smooth surface and add ethanol 96% of 5000 ml until the entire surface is submerged.
 - Then covered with aluminum foil and tied with string, and then stored in a place that is not exposed to direct light, at room temperature.

- d. After 24 hours, the sample was stirred until the samples are at the bottom is at the top, for 5 days.
 - e. The results are filtered with gauze and then put into the Erlenmeyer.
 - f. After the solvent was concentrated in a rotary evaporator results obtained later in uapkan over a water bath to obtain a viscous extract, and then weighed.
6. Making Ointment:
- a. Prepared tools and materials
 - b. Cleaned tool - a tool used
 - c. In weighing the materials used
 - d. Stearilalkohol melted, white vaseline and propyl paraben in the vaporizer cup over a water bath (water bath) to a temperature of 750C (oil phase)
 - e. Amalgamated propylene glycol, water and methyl paraben in the vaporizer cup over a water bath (water bath) to a temperature of 750C (water phase).
 - f. When both phases reach a temperature of 750C, add sodium laurylsulphate in the water phase.
 - g. Moved water phase and oil phase into a mortar and then crushed until homogeneous.
 - h. Re-weigh as much as 67.2 grams of ointment base and then add the herb extract as much as 24 grams meniran, crushed until homogeneous.
 - i. Included in the tube, as much as 10 grams / tube.
 - j. Pharmaceutically tested against meniran ointment herbal extracts that have been made.
7. Testing Ointment:
- a. Organoleptic test
Seen directly shape, color, and odor of each preparation ointment (8)
 - b. Homogeneity test
If applied on a piece of glass or other transparent material fit should show a homogeneous composition (10).
 - c. Test Particle Size

By using the microscope taken a number of ointment, applied to the object glass and observed under a microscope (11).

- d. pH Test
Ointment diluted with distilled water and the pH was measured by dipping into a universal pH indicator paper ointment preparations. skin pH of 4.5 to 6.5. (11).
- e. Inherent Power Test
Ointment put of approximately 200 mg of the above slide predetermined extent. Glass other objects placed on top of the ointment is then placed with a load of 1 kg for 5 minutes. After 5 minutes the load is released and then recorded the time until the second glass apart (12).
- f. Test of the spread
 1. Ointment weighed as much as 0.5 grams placed amid the tool (glassround)
 2. Glass rounded at the top weighed first, then placed on future ointment and left for 1 minute
 3. Diameter ointment spread measured, taken diameter of several sides.
 4. Additional costs as much as 50 grams of added, allowed to stand for 1 minute and note the diameter of ointment which spread like never before.
 5. Passed by adding each time with additional load 50 grams and a diameter of ointment noted that spreads, after 1 minute(12).

G. Data Analysis

Data obtained from the results of several tests that test the homogeneity, organoleptic test, test particle size, pH test, adhesion test, and the test of the spread. Data analysis was performed by comparing the test results with the requirements of each test.

RESULTS AND DISCUSSION

A. Results

1. Making

In this study the samples used were dried herbs meniran 500 grams were extracted by maceration for five days. The solvent used is 96% ethanol, then concentrated using a rotary evaporator. Concentrated extract was evaporated over a water bath to obtain a viscous extract as much as 24 grams.

Viscous extract herbal preparations meniran made into an ointment with ointment base which can be cleaned with water that is sterile alcohol, white petroleum jelly, sodium lauryl sulfate, propylene glycol, methylparaben, Propylparaben, tested with several test that organoleptic test, homogeneity test, absorption test, particle size, pH test, adhesion test, and the test of the spread.



Figure 1. Extract herbs meniran

2. Testing

Organoleptic test
Shape: Half solid
Smell: Typical meniran
Color: black-green



Figure 2. ointment herbal extracts meniran

3. Test of homogeneity

The test results indicate stacking homogeneous homogeneity. Terms of good ointment dosage should be homogeneous.



Figure 3. Test of homogeneity

4. Test the pH

From the results obtained pH measurements ointment preparations 5. Terms pH of the skin 4.5-6.5.



Figure 4. hasil pH testing

5. Test of the spread

Test results indicate the diameter of the spread ointment herbal extracts meniran 5.7 cm. Terms of the spread ointment 5.4 cm-6.5 cm.

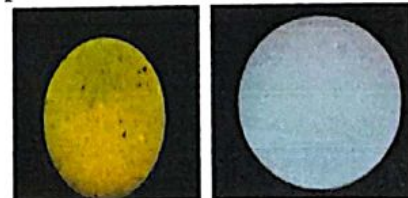


Figure 5. Results of measurement of the diameter of the preparation ointment herbal extracts meniran
a) Horizontal b) Vertical

6. Test the adhesion

Results of adhesion testing is required for removing the two objects glass is 4 seconds. Terms of good adhesion, not less of 4 seconds.

7. Test particle size

The test results show the particle size of the particle size is smaller comparative ointment, ointment compared with meniran herbal extracts. The smaller the particle size, the absorption of the drug into the skin faster.

B. Discussion

Research conducted boil ointment is making preparations of extracts meniran herbs. Meniran herbs used in this study because the study have previously shown that the herbal extract meniran efficacious as antibacterial. Meniran herbal extracts obtained by maceration using 96% ethanol, concentrated and evaporated to use rotary evaporator over a water bath to obtain a thick extract.

Making use of the basic ointment ointment preparations that can be washed with water that is sterile alcohol, sodium laurylsulphate, propilenglikol, methyl paraben, propyl paraben, white petroleum jelly and water. The use of an ointment base which can be cleaned with water intended for basic ointment works systemically, so the release of the drug ingredient in the ointment base quickly absorbed, so that boil heal faster. Preservatives that are used as methylparaben water phase and oil phase Propylparaben to prevent destruction by microbes. Meniran herb extract ointment preparations are packaged in a tube, aimed at reducing contact with air.

Organoleptic test is a test of the physical appearance of the preparation of ointments, which includes dosage forms, smell and color. From observations indicate that the ointment preparation of herbal extracts meniran semi-solid form and is a common form of ointment preparations, and the distinctive smell meniran, and greenish-black.

Homogeneity test done to see the mixing of ingredients in ointment preparations. From observations showed a homogeneous composition, because the

colors are evenly distributed in all parts of the ointment showed that the substance active been mixed evenly in each section so that the ointment preparations expected every part of ointments containing the same amount of drug substance, thus ointment used with the same dose at any time usage.

Test shows the particle size comparison ointment more smaller than meniran ointment herbal extracts. The smaller the particle size of a substance in the preparation of ointments, the faster ingredients into or absorbed into in the skin so as to produce the desired effect.

Test the pH of the skin herb extract ointment preparations meniran namely 5, this shows that the pH of the preparation ointment herbal extracts meniran qualify, because according to the pH of the skin 4.5-6.5. so it is safe to use. pH is too acidic can irritate the skin, while the pH is too alkaline can create scaly skin

Test of the spread ointment was conducted to determine the ability of the ointment preparations spread on the skin. The terms of the spread of good ointment is 5.4 to 6.4 cm.

(13). The results showed that the extract of the spread ointment meniran herbs, 5.7 cm, and meet the requirements of the spread ointment. Power spread the good cause deployment preparations in skin ointments increasingly widespread making contact with the skin will also be more widely, then the absorption of drugs to the skin faster.

Ointment adhesion test was conducted to determine the ability of the ointment preparations attached to the treated skin. The test results showed adhesion ointment

herbal extracts meniran 4 seconds, and has met the requirements of adhesion ointment

good that is not less than 4 seconds. The longer the ointment preparations attached on the skin then the effect will be even greater, so that the effect of the

desired to be achieved because of the drug absorbed into the skin. (14).

From the test results are compared with each of the testing requirements can be concluded that the herbal extract ointment meniran meet organoleptic testing requirements, homogeneity test, test dispersive power, adhesion test, test and test the pH of the particle size.

Conclusion

Results of research conducted showed that the herbal extract meniran with a concentration of 30% can be made preparations ulcer ointment herbal extracts meniran eligible organoleptic testing, homogenits, pH, adhesion, dispersive power, particle size and pH.

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