



## Benefits of Betel Leaves as a Medicine for Postpartum Perineal Wounds

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**Abstract.** Indonesia is a country rich in natural materials for human health. One of them is red betel. This research was conducted to formulate red betel as a medicine for perineal wounds in mothers after childbirth. Making wound medicine by boiling. Boil 4-5 sheets or 9-11 grams (*Piper Crocatum*) that have been washed thoroughly, put 500 ml of water into a pot made of clay so as not to damage the substance content of red betel leaf (*Piper Crocatum*). Wait for it to boil for 15 minutes. Let the boiled water cool for 30 minutes, then strain the water and put the filtered result in the sterile bottle that has been provided. After that, respondents will use boiled water with red betel leaves (*Piper Crocatum*) after taking a shower in the morning and also in the afternoon. After finishing, the respondent will dry his female intimate organs with a towel until dry. Rinse the boiled water of red betel leaves (*Piper Crocatum*) once a scoop is given as much as 200 ml for one use.

**Keywords:** leaves, betel, boils, wounds, perineum

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### INTRODUCTION

Red betel leaves (*Piper scrotum*), aloe vera, and calendula are traditional medicines inherited from ancestors that may serve as nonpharmacological therapies to expedite the healing of perineal lesions (Misrina & Silvia, 2022). Perineal treatment utilizing red betel leaves (*Piper scrotum*) has been practiced across generations; in addition to its accessibility, red betel leaves are classified as medicinal plants and are recognized as living pharmacies. The advantages of betel leaves are varied, as are their methods of preparation, which may include boiling or brewing with hot water or for cebok (Misrina & Silvia, 2022).

*Piper scrotum* contains phytochemical components, including flavonoids, saponins, tannins, and essential oils. Moreover, *piper scrotum* has several chemical constituents, such as hydroxyanisole, chavicol, capitol, allyprocatechol, carvacrol, eugenol, p-cymene, cineole, caryophyllene, estragole, terpenes, and phenylpropane. The chemical composition of carvakol, eugenol, and essential oils is advantageous for antiseptic and antibacterial purposes. *Piper*

crocatum possesses double the antiseptic efficacy of green betel leaves, and its antibacterial compounds can eliminate both gram-positive and gram-negative germs. Microorganisms that infect wounds impede the healing process through various processes. Furthermore, Piper scrotum comprises flavonoids and tannins that might expedite the epithelialization phase of the lesion, hence facilitating wound healing (Hidayat, 2019).

The national postpartum program policy established by the health department mandates a minimum of four visits for women during the postpartum period to ensure their fundamental health needs are met. The Minister of Health oversees Regulation 1464/MENKES/PER/X/2010 about "Permits and Implementation of Midwife Practices". Article 10 addresses midwives delivering maternal health services, including care during the postpartum period. By the Decree of the Minister of Health of the Republic of Indonesia No. 381/MENKES/SK/III/2007 Formulating a national traditional medicine policy (Kotranas) that seeks to promote the sustainable utilization of natural resources and traditional herbs to enhance health services.

Research by Siagian et al. (2020) titled "The Effect of Red Betel Leaf Decoction (Piper Crocatum) on Perineal Wound Healing in Postpartum Mothers in Tanjung Jati Village, Binjai District, Lalat Regency." The results indicated a statistically significant difference (p-value 0.001) in healing time between the control and experimental groups. The healing duration in the control group was  $5.28 \pm 0.958$  days, with a range of 3 to 6 days, whereas the intervention group exhibited an average healing duration of  $3.00 \pm 1.372$  days, with a range of 2 to 5 days. A notable change was observed (p-value = 0.001). The decoction of red betel leaves influences the healing of perineal lesions.

If the mother undergoes the postpartum period and receives a stitch, she experiences agony. During the postpartum period, when the husband engages in sexual intercourse with his wife, the mother may have heightened pain, and the perineal stitches may detach owing to friction from the husband's genitalia. Islam emphasizes the importance of habituating Muslims to physical and mental cleanliness, spiritual and bodily purity, and the purity of heart. Allah SWT said, "And Allah loves those who are pure" (Q.S at-Taubah: 108). Allah said, "Allah does not intend to impose difficulty upon you in practicing your religion, but He aims to purify you" (Q.S al-Ma'idah: 6).

According to presurvey data collected by researchers at PMB Sulastris, S.ST., M.Kes in March 2024, information was gathered from 14 mothers who had normal childbirth, of whom nine (64.3%) experienced perineal lacerations. Following interviews conducted with

postpartum mothers in their homes, it was found that all participants cleaned their perineal wounds with clean water 2-3 times daily and were unaware of the treatment involving a decoction of red betel leaves. Each interviewed mother reported that the wound felt moist and began to heal ten days post-delivery. In 2023, there was one reported instance of perineal infection in the practice of PMB Sulastri, S.ST., M.Kes (PMB Sulastri, 2024). Considering the phenomenon that aids in preventing infection in postpartum mothers with perineal wounds, alongside the numerous advantages of Red Betel Leaves (*Piper Crocatum*), which serve as a natural antibiotic and antiseptic and are commonly found, particularly in Pagelaran District, the researcher intends to conduct a study titled "The Effect of Red Betel Leaf Decoction (*Piper Crocatum*) on the Healing of Perineal Wounds in Postpartum Mothers at PMB Sulastri, S.ST., M.Kes in 2024."

## LITERATURE REVIEW

### Definition of Red Betel Leaf (*Piper Crocatum*)

Red Betel Leaf (*Piper Crocatum*) is indigenous to Indonesia. It is recognized to thrive in many areas of Indonesia, including the vicinity of the Yogyakarta Palace, the eastern slopes of Merapi, and Papua and West Java. Red betel thrives in shaded environments with less sunshine (Hidayat, 2019).

The red betel, scientifically designated as *Piper Crocatum*, exhibits a vining growth habit or ascends the trunks of adjacent trees, characterized by silvery-green leaf surfaces on the dorsal side and purplish-red on the ventral side, displaying a glossy appearance when illuminated. Lush leaves measure 5 cm and 10 cm in size. The leaves exhibit a robust and rigid texture when grasped rather than being limp. Red betel typically thrives in shaded or chilly environments. The distinction between red betel and green betel is characterized by the crimson pigmentation of the leaves, which, when ripped, exhibit a slimy texture and a more pronounced fragrance (Hidayat, 2019).

**Figure 1.**

***Red Betel Leaf (Piper Crocatum)***



Source: Rini Anggeriani (2018)

Research by Rini Anggeriani (2018) in the scholarly journal Multi Science Health indicates that red betel leaf extract (*Piper crocatum*) possesses antiseptic and antibacterial properties. *Piper Crocatum* possesses antibacterial efficacy that is double that of green betel leaves. The chemical composition of *piper scrotum* extract includes essential oils, hydroxyanisole, chavicol, capitol, allylpropocatechol, carvacrol, eugenol, p-cymene, cineole, carioles, estragole, terpenes, and phenylpropanoids. Carvacrol is an antiseptic agent with disinfecting and antifungal properties. The extract of *Piper crocatum* comprises flavonoids, alkaloids, tannins, and essential oils, primarily exhibiting antibacterial properties.

Research demonstrates that *piper scrotum* extract exhibits antibacterial properties against *Staphylococcus aureus* and *Escherichia coli*. *Piper Crocatum* comprises numerous health-promoting constituents, notably arecoline, present in all plant sections, which aids in stimulating the central nervous system, enhancing cognitive function, and aiding peristaltic motions. Enhanced peristalsis improves blood circulation, hence increasing oxygen levels, which significantly aids the wound healing process. The tannin component in the leaves of *Piper scrotum* is effective in diminishing vaginal fluid flow to promote wound desiccation. Its antibacterial qualities facilitate the healing of skin lesions. Postpartum women also utilize it to treat perineal sores by soaking or ingesting them (Rini Anggeriani, 2018).

a. Classification of Red Betel Leaves (*piper crocatum*)

**Table 1**  
**Classification of Red Betel Leaves (*Piper Crocatum*)**

It	Classification	Classification
1	Kingdom	Plantae
2	Division	Magnoliophyta (Flowering plant)
3	Class	Magnoliopsida (Dicots)
4	Order	Piperales
5	Family	Piperaceae
6	Genus	Piper
7	Species	Piper crocatum

(Ministry of Health of the Republic of Indonesia, 2016).

b. Morphology of red betel leaf (*piper crocatum*)

1) Trunk

The rounded stems are purplish-green and do not flower. The surface is rough, and when exposed to light, it will dry quickly. The stem is threaded with a book distance of 5-10 cm. Roots grow in every book.

2) Leaf

The leaves are stalked to form a heart with tapered, flat-edged parts, and the surface is shiny or hairless. The length of the leaves can reach 15-20 cm. The color of the upper leaves is green with white-to-gray patterns. The underside of the leaves is red. The leaves are slimy, very bitter, and fragrant with a typical red betel aroma.

3) Root

The red betel root (*Piper Crocatum*) is a single, round, yellowish-brown root (Hidayat, 2019).

c. Where to live

Red betel plants are relatively rare because they do not grow in every place or region. The red betel (*Piper Crocatum*) cannot thrive in hot regions. Meanwhile, in a cold place, red betel can grow well. If it is exposed to too much sunlight, the stem dries out quickly, but if it is overwatered, the stem roots rot quickly. The red betel plant (*Piper Crocatum*) will grow well if it gets 60-70% of sunlight (Hidayat, 2019).

d. The content of Red Betel (*Piper Crocatum*), according to Hidayat (2019)

1) Flavonoids

Flavonoids in plants bind to sugars as glycosides and flavonoid aglicans; flavonoid sugars are readily soluble in water. Flavonoids have antibiotic activity that can interfere with the

function of microorganisms such as bacteria and viruses by damaging cell membranes, resulting in changes in cell permeability that result in cell damage or death. Furthermore, flavonoids can expedite the epithelialization phase of the wound site, hence facilitating the healing process. Flavonoid chemicals are polyphenolic substances with 15 carbon atoms, characterized by two interconnected benzene rings linked by a linear chain of three carbon atoms. Flavonoid chemicals are present in all plant parts, including leaves, roots, wood, bark, pollen, flowers, fruits, and seeds (Hidayat, 2019).

## 2) Saponins

Saponins are triterpene glycosides and sterols identified in over 90 plant groups. Saponins are surface-active chemicals with soap-like properties, identifiable by their capacity to generate foam and lyse red blood cells (Hidayat, 2019). Saponins are glucosides soluble in ethanol and water that exhibit antibacterial, antifungal, and antiviral properties by destabilizing bacterial cell membranes, resulting in bacteriolysis and the release of critical intracellular components. Furthermore, saponins can stimulate the synthesis of collagen I, a protein integral to the wound-healing process (Hidayat, 2019).

## 3) Alkaloids

Alkaloids are bioactive chemicals that possess antibacterial properties. They disrupt the peptidoglycan constituents of bacterial cells, preventing the proper formation of the cell wall and leading to cell death. The antibacterial capacity to avert infection facilitates the swift conclusion of the inflammatory phase in wound healing, expediting the onset of the proliferative phase (Hidayat, 2019).

## 4) Tannins

Tannins are secondary metabolites present in plants and are selectively consumed by them. Tannins are categorized as polyphenolic chemicals that can form complicated associations with other macromolecules. Tannins are categorized into two groups: readily hydrolyzed tannins and condensed tannins. Tannins exhibit antibacterial activity due to their toxic properties, which can compromise bacterial cell membranes. Additionally, tannin-estrogen compounds can facilitate the formation of complexes with microbial enzyme binding compounds, thereby enhancing the inherent toxicity of tannins. Tannins serve as astringents, promote hemostasis, expedite wound healing, mitigate inflammation of mucous membranes, and facilitate tissue regeneration. The tannin concentration enhances wound healing by many biological mechanisms, including the elimination of free radicals

and reactive oxygen species, promoting wound closure, and facilitating the development of capillary blood vessels and fibroblasts (Hidayat, 2019).

#### 5) Essential Oils

Essential oils are transparent liquids that possess the fragrance of their source plants. Essential oils provide potent antibacterial and antifungal properties. Essential oils function as antibacterial agents by disrupting the processes involved in membrane or cell wall formation, resulting in incomplete or absent structures. The primary constituents of astarian oil include betle phenol and various derivatives: eugenol (26.8-42.5%), cineol (2.4-4.8%), methyl eugenol (4.2-15.8%), caryophyllene (3-9.8%), hydroxy cavicol, cavinyll (7.2-16.7%), kabivetol (2.7-6.2%), estragol, ilypyrocatechol (9.6%), carvacol (2.2-5.6%), alkaloids, flavonoids, triterpenoids or steroids, saponins, terpenes, phenylpropane, terpinene, diastase (0.8-1.8%), and tannins (1-1.3%) (Hidayat, 2019).

#### 6) Carvakrol

Carvakol can be a disinfectant and antifungal, functioning as an antibiotic (Hidayat, 2019).

#### 7) Eugenol

It possesses antiseptic and antibacterial properties. It also promotes the generation of new epithelial cells and facilitates the epithelial process, enhancing the acceleration of wound healing. Eugenol functions as an analgesic. It inhibits pain by obstructing the cyclooxygenase enzyme pathway, diminishing prostaglandin production and leading to reduced pain (Hidayat, 2019).

#### 8) Polyphenols

Polyphenols are phenolic substances characterized by a hydroxyl group (-OH). This molecule is an antioxidant 100 times more potent than vitamin C and 25 times more potent than vitamin E. Polyphenols stimulate collagen synthesis in the skin (Hidayat, 2019).

### **Main Benefits of Red Betel (*Piper Crocatum*)**

The main benefits of green betel are as follows:

#### 1) Inflammation of the eyes

Red betel (*Piper Crocatum*) is used for eye inflammation. Four relatively young red betel leaves (the fifth leaf from the shoots ) are prepared, and they are washed thoroughly. Two glasses of water are boiled until boiling, and one glass remains. After cooling, the water is used to soak the sore eye (Hidayat, 2019).

#### 2) Mouthwash (lousy breath medicine, canker sores, strep throat).

Use red betel (*Piper Crocatum*) as a mouthwash. Prepare five betel leaves. Wash the leaves. Boil in 2 cups of water (400 ml) until 1 cup remains. Gargle with water three times a day (Hidayat, 2019).

### 3) Wound medicine

Red betel (*Piper Crocatum*) is used as a wound medicine. To prepare dark red betel leaves, wash them thoroughly and soak them in 70% alcohol for 30 minutes to kill the bacteria that stick to them. The red betel leaves are mashed until smooth. Then, apply it to the body that hurts, such as wounds, scabs, itching, eczema, acne, and kids. Use twice daily in the morning and evening (Hidayat, 2019).

### 4) Female organ cleanser

Red betel (*Piper Crocatum*) is used to clean female organs; namely, prepare betel leaves boiled in 4 cups (800 ml) of water until boiling. In a warm state, use betel leaf decoction to wash the vagina twice a day, in the morning and at night, before going to bed (Hidayat, 2019).

### 5) Cough and Appetite Booster

Using red betel (*Piper Crocatum*) for coughing and appetite enhancers to prepare ten red betel leaves that are not too old, wash them thoroughly with running water, and soak them in 70% alcohol for 30 minutes to kill bacteria. Red betel leaves Add 100 grams of white sugar and boil with 4 cups of water (800 ml) until one cup remains. Once cool, pour into a Clean and sterile bottle. This herb can be drunk three times a day, once a day, to drink one tablespoon (Hidayat, 2019).

## METHOD

### **How to Process Red Betel Leaves (*Piper Crocatom*) (Siagian, 2020).**

The processing of red betel leaves (*Piper Crocatum*) for healing perineal wounds in postpartum mothers is as follows:

#### a) Tools and Materials

- (1) Red betel leaf (*Piper Crocatum*) 9-11 grams.
- (2) Water 500 ml.
- (3) Clay pot and strainer.
- (4) Sterile bottles.

#### b) Implementation Procedure (Siagian, 2020)

- (1) Boil 4-5 sheets or 9-11 grams (*Piper Crocatum*) that have been washed thoroughly, put 500 ml of water into a pot made of clay so as not to damage the substance content of red betel leaf (*Piper Crocatum*). Please wait for it to boil for 15 minutes. Let the boiled water cool for 30 minutes, then strain the water and put the filtered result in the sterile bottle provided. After that, respondents will use boiled water with red betel leaves (*Piper Crocatum*) after showering in the morning and in the afternoon. After finishing, the respondent will dry his female intimate organs with a towel until dry. Rinse the boiled water of red betel leaves (*Piper Crocatum*) once a scoop is given as much as 200 ml for one use.
- (2) Do it for seven days with 2 uses a day, namely after taking a shower in the morning and afternoon.

**Figure 2.**  
**Red betel leaf stew (*Piper Crocatum*)**



**SOP FOR MAKING RED BETEL LEAF STEW (*Piper Crocatum*)**

- |                  |                                                                                                                                                                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Understanding | Red betel leaves have the scientific name <i>Piper Crocatum</i> , which grows vines or leans against the trunk of other trees with silvery green leaf surfaces on the front and purplish-red on the back, and they are shiny when exposed to light. Lush leaves are 5 cm and 10 cm in size. When held, the leaves feel thick and stiff (not limp). |
| 2. Purpose       | For the conception of perineal wounds <span style="float: right;">Photograph</span>                                                                                                                                                                                                                                                                |

3. Tools and Materials

- a. Red betel leaf (*Piper Crocatum*) 9-11 grams (4-5 sheets)
- b. Water 500 ml
- c. Clay pots and strainers
- d. Sterile bottles



4. Steps

- a. Wash your hands
- b. Boil 9-11 grams of red betel leaves (*Piper Crocatum*) that have been washed thoroughly, put 500 ml of water into a clay pot so as not to damage the substance content of red betel leaves (*Piper Crocatum*).
- c. Wait for it to boil for 15 minutes.
- d. Let the boiled water cool for 30 minutes, then strain the water and put the filtered results into the sterile bottle that has been provided. After that, respondents will use boiled water with red betel leaves (*Piper Crocatum*) after showering in the morning and in the afternoon.
- e. After finishing, the respondent will dry his female intimate organs with a towel until dry.
- f. Rinse the boiled water of red betel leaves (*Piper Crocatum*) once a scoop is given as much as 200 ml for one use.
- g. Do it for seven days with 2 uses a day, namely after taking a shower in the morning and in the afternoon.



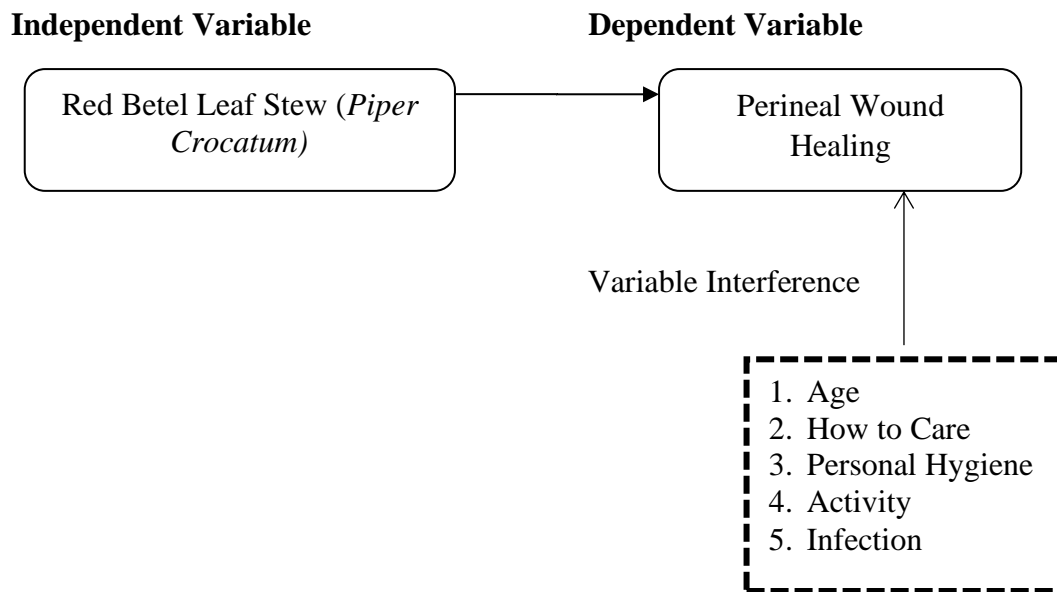
5. Evaluation

- a. Ask your mother how much you understand and understand the technique of making red betel leaf stew (*Piper Crocatum*)
- b. Summarize the results of the activity
- c. Contract for the next activity
- d. End activity

- e. Wash your hands
- f. Documentation: Record the results of actions (date, time, paragraph, full name, activities and observation results).

**RESULTS AND DISCUSSION**

Visualization of the relationship or relationship between one concept to another or between one variable and another variable of the problem to be studied (Notoatmodjo, 2018).

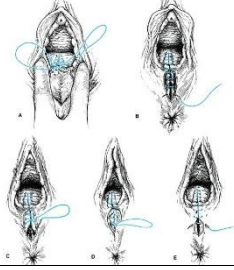


**Figure 3.**  
**Conceptual Framework**

Information:

- 1. Controlled variables
  - a. Mothers who already know about the benefits of red betel leaves
  - b. The mother whose stitches were not given anything
  - c. Mothers with good nutrition (normal BMI)

SOP FOR PERINEAL WOUND EXAMINATION		
1. Understanding	Perineal wounds are wounds caused by tears in the birth canal . Due to tearing or episiotomy during fetal delivery	
2. Purpose	To prevent infection in the vulva area, perineum, and in the uterus, because during childbirth the vulva is the gateway for germs to enter, so it is easy to have an infection in the perineal sutures of the vaginal and uterine canals.	Photograph

		
3. Tools and Materials	<ul style="list-style-type: none"> <li>b. Red betel leaf decoction (<i>Piper Crocatum</i>)</li> <li>a. Clean towels</li> <li>b. Pads</li> <li>c. Water dipper</li> </ul>	
4. Steps	<ul style="list-style-type: none"> <li>a. Hand washing</li> <li>b. Fill the dipper with a decoction of red betel leaf water (<i>Piper Crocatum</i>).</li> <li>c. Discard the pads that have been full of downward movements towards the rectum and place the pads in a plastic bag.</li> <li>d. Urinate and defecate to the toilet.</li> <li>e. Sprinkle the entire perineum with boiled water of red betel leaf (<i>Piper Crocatum</i>).</li> <li>f. Dry the perineum using a tissue/towel from front to back.</li> <li>g. Install the pads from front to back.</li> <li>h. Wash your hands again</li> </ul>	
5. Evaluation	Documentation: Record the results of actions (date, time, paragraph, full name, activities and observation results).	

**CONCLUSION**

Betel leaves have the potential as a perineal wound medicine because they contain analgesic compounds and antibiotics. To prepare a boil of 4-5 red betel leaves in 500 ml of water, boil for 15 minutes and cool for 30 minutes. Use as much as 200 ml after morning and evening showers to clean the intimate organs.

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