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IDENTIFICATION OF ETHNOMEDICAL MEDICAL PLANTS FOR DEGENERATIVE DISEASES IN TARERAN DISTRICT, SELATAN MINAHASA REGENCY, NORTH SULAWESI, INDONESIA

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Abstract

This study aims to: Obtain distribution data and types of medicinal plants in Tareran District, South Minahasa. Obtain data on the use of medicinal plants for degenerative diseases in Tareran District, South Minahasa. Plant samples can be in the form of leaves, stems and roots or whole plants obtained in Tareran District, South Minahasa Regency. Samples of medicinal plants are devoted to medicinal plants that are used for degenerative diseases. The samples used were wet samples and dry samples (10% moisture content) and wet samples. Materials used include ethanol, alcohol, plant specimen paper, electric oven, etc. Inventory of medicinal plants using plant determination books and writing instruments, cameras and specimen boxes. Data on the use/utilization of medicinal plants using a questionnaire. The results showed that in Tareran District there are many types of plants used as medicinal plants for degenerative diseases, including: Cinnamon (hypertension), Mengkudu (Diabetes), Temulawak (hyperlipidemia). The community has not cultivated medicinal plants intensively. Public knowledge of the scientific efficacy of medicinal plants is still very little so that it affects the utilization of these medicinal plants. In terms of the use of medicinal plants, the economically weak community uses medicinal plants more than the middle to upper economic community. In fact, there are more doubts about the efficacy of medicinal plants in the middle and upper economic community. The use of medicinal plants in the middle to upper economic community is only carried out by the elderly.

Keywords: plant, medicine, degenerative diseases, Tareran district

INTRODUCTION

The use of plants as medicine is as old as human civilization. Plants are a storehouse of chemicals that have a million benefits, including medicine for various diseases. The ability to mix medicinal plants and herbs is a hereditary heritage and is deeply rooted in the community. Plants which are the raw materials for traditional medicines are spread in almost all parts of Indonesia.

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In the tropical forests of Indonesia there are 30,000 species of plants. Of these, around 9,600 species are known to have medicinal properties, but only 200 species have been used as raw materials in the traditional medicine industry. Opportunities for the development of medicinal plant cultivation are still very wide open in line with the development of the herbal medicine, herbal medicine, phytopharmaca and traditional cosmetics industries.

Utilization of plant parts such as roots, stems, bark, leaves, flowers and fruit as a source of medicine for various diseases has been going on for generations in Indonesia (ethnomedical). Indonesian society relies on traditional medicine by utilizing plant parts so that it has developed into an ethnomedical culture for centuries. The development of ethnomedical in Indonesia is due to the very large biodiversity of flora and fauna in Indonesia. Geographically, Indonesia is an archipelagic country, consisting of various ethnic groups, so it has various ethnomedical aspects.

Ethnomedical wealth is a potential that should be developed in order to improve the welfare of the community. Many modern medicines are derived from plants that were originally discovered through traditional use. The use of traditional medicine is generally preferred as an effort to maintain health or prevention, although there are also efforts to treat a disease. Some examples of drugs from plant materials include anti-cancer drugs (padophyllatoxin, vincristine, vinblastine, taxol), antimalarials (quanine and artemisinin), heart-strengthening drugs (gigoxin) and fever drugs (aspirin). Especially for anticancer drugs NCI (National Cancer Institute) has screened about 114,000 plant extracts from 1960 to 1982 and found about 35,000 plant samples have anticancer activity. In 1991 about 28,000 plant samples from around the world were collected because they have anticancer activity. About 62% of the 87 types of anticancer drugs come from natural ingredients (Cragg, 1993).

From year to year research on chemical compounds from plants and their derivatives continues to develop along with the movement back to nature (back to nature). The world's pharmaceutical industry has begun to concentrate on developing drugs derived from plants. Tropical countries are a vital source of pharmaceutical raw materials. Along with recommendations in the medical world that direct the prevention and treatment of diseases from natural ingredients and the success of Asian countries in developing traditional medicines such as China and Korea. Less than 1% of tropical plants have been tested for development into medicine. About 25% of modern medicine comes from tropical plants (Kong et al. 2003).

The development of traditional medicines into phytopharmaca dosage forms or as raw materials for the pharmaceutical industry can increase the economic value of medicinal plants that are still allowed to grow naturally or have not been cultivated intensively. The current limitation of traditional Indonesian medicine is the lack of scientific research on phytochemical profiles, their biochemical activities that support an understanding of how traditional medicines work in the human body so that they are worthy of development. Whereas the development of traditional medicine is quite promising in improving the economy of the people who ethnomedically utilize the types of traditional medicinal ingredients in an area.

Groups of medicinal plants that have the potential to be researched and developed into

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phytopharmaceutical products are medicinal plants that have antihyperlipidemic properties. Groups of hyperlipidemic diseases such as hypercholesterolemia can cause various diseases such as diabetes and coronary heart disease (CHD), which according to WHO and the American Heart Association are still the leading causes of death in the world today.

The negative implication of changes in the diet of Indonesian people who are starting to like fast food is an increase in cholesterol levels in a person's blood or known as hypercholesterolemia or hyperlipidemia (Purwanto A, 2003). Especially for the Minahasa people who really like fatty foods, especially animal fats, the incidence of hyperlipidemia is quite high in Minahasa Regency. However, in recent years, the national incidence of hyperlipidemia has shown an increasing prevalence.

Cases of patients with hypercholesterolemia are increasing, marked by the increasing incidence of stroke, hypertension and coronary heart disease in recent times where hypercholesterolemia is a factor that is closely related to the incidence of these diseases. The consumption of animal fats with high intensity by the Minahasa community has caused many incidents of hyperlipidemia in this area since ancient times. Therefore, the Minahasa community has an ethnomedical culture of treating hyperlipidemia that is passed down from generation to generation. Empirically the use of medicinal plants is effective in treating various diseases caused by hyperlipidemia. This is a potential that needs to be researched so that it can be developed into a phytopharmaceutical dosage form, besides being beneficial for health, it can also increase the economic value of plants.

Tareran District is one of the sub-districts in South Minahasa Regency which has a culture of using medicinal plants for a long time. The location of Tareran sub-district which has a lot of plant vegetation causes people to know and have used various types of medicinal plants. Medicinal plants that are interesting to study originating from this area are medicinal plants used for degenerative diseases. This study aims to: Obtain distribution data and types of medicinal plants in Tareran District, South Minahasa. Obtaining data on the use of medicinal plants for degenerative diseases in Tareran District, South Minahasa. The results of this study are expected to provide distribution data, types of plants and how to use medicinal plants in Tareran Minahasa District. The results of this study became the basis for the development of medicinal plants and further research.

MATERIALS AND METHODS

Place and time of research

This research was carried out in Tareran sub-district, South Minahasa Regency and the Biology Laboratory of Manado State University. Held from April to October 2012.

Tools and materials

Plant samples can be in the form of leaves, stems and roots or whole plants obtained in Tareran District, South Minahasa Regency. Samples of medicinal plants are devoted to medicinal plants that are used for degenerative diseases. The samples used were wet samples and dry samples (10% moisture content) and wet samples. Materials used include ethanol, alcohol, plant specimen paper, electric oven,

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etc. Inventory of medicinal plants using plant determination books and writing instruments, cameras and specimen boxes. Data on the use/utilization of medicinal plants using a questionnaire.

Research methods

1. Inventory of ethnomedical antihyperlipidemic medicinal plants
   Conducted by direct inventory in villages that have been identified as having a strong ethnomedical culture in Tomohon City. Plant simplicia was taken and inventoried. Plants whose species are not yet known are determined using a plant determination book.
2. Study on the use of medicinal plants by the community
   The study of the use of medicinal plants by the community was carried out using a questionnaire instrument.
3. Data analysis techniques
   Research data in descriptive analysis.

RESULTS AND DISCUSSION

General Description

Tareran District is one of the sub-districts in Minahasa Regency. Tareran is located in the central area of Minahasa Regency. Communities in several villages in Tareran District, including Tumaluntung Village, have long known various types of plants used as medicinal plants.

Medicinal Plants for Degenerative Diseases

The collection of medicinal plants obtained and under in the laboratory identified the species and then carried out a literature study on plant descriptions, chemical content, efficacy and pharmacological effects. The plants obtained are as follows:

1. Cengkeh / Clove (*Syzygium aromaticum*, (Linn.) Merr.). Family: Myrtaceae

Description

Clove (*Syzygium aromaticum*) is a type of herbaceous plant that can have large tree trunks and hard wood, cloves can survive tens or even hundreds of years, the height can reach 20-30 meters and the branches are quite thick. The branches of the clove plant are generally long and filled with small branches that break easily. The crown or also commonly called the cone-shaped clove tree canopy. Clove leaves are green in the shape of an elongated oval with an angled tip and base, an average of 2-3 cm wide and 7.5-12.5 cm long without stems. Clove flowers and fruit will appear at the end of the leaf twigs with short stalks and bunches. When they are young, clove flowers are purplish, then turn greenish yellow and turn pink again when they are old. While dried clove flowers are blackish brown in color and have a spicy taste because they contain essential oils. Generally, cloves first bear fruit at the age of 4-7 years. Clove plants will grow well if there is enough water and direct sunlight. In Indonesia, cloves are suitable to be planted both in lowland areas near the coast and in the mountains at an altitude of 900 meters above sea level.

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Treatable Diseases: Cholera, Darkens eyebrows, Increases heart rate; Measles. The results of research from Pendong and Mokosuli, 2010, clove leaf extract was also used to preserve tilapia fish. Clove leaf extract contains steroids and triterpenoids so that it has the potential to be developed for degenerative diseases of hyperlipidemia or hypercholesterolemia.

Composition : Clove flowers (*Syzygium aromaticum*) in addition to containing essential oils, also contain chemical compounds called eugenol, oleanolic acid, galotanic acid, phenyline, karyophyllin, resins and gums.

2. Ekor Kucing (*Acalypha hispida Burm*. f.); Family: Euphorbiaceae

Description :

Ekor kucing is native to the West Indies. Generally, planted as an ornamental plant in the yard or in gardens. There are quite a lot of Ekor kucing found in Tareran District, Kab. South Minahasa. The characteristics of this plant; shrub, growing upright, 1-3 m high. Stem round, branching simpodial, rough surface, greenish brown. Single leaf, long-stemmed, alternate. The leaf blade is oval or oval in shape, pointed tip, blunt base, serrated edge, pinnate bone, 12-20 cm long, 6-16 cm wide, light green. Flowers are unisexual in one tree. The female flowers are gathered in a wreath in the form of grains that come out of the axils of the leaves, they are elliptical in shape and dangle down, 1-1.5 cm in diameter, 20-50 cm long, red. The fruit is round, small, hairy, green. Seeds are round, small, dirty white. Ekor kucing can be propagated by seeds

Treatable Diseases: Ekor kucing flowers taste sweet, chelate, cool in nature. This flower is efficacious to stop bleeding (hemostasis) and laxative urine (diuretic). The roots and leaves have hemostatic properties.

Composition : The leaves contain acalyphin, flavonoids, saponins, and tannins. Flowers contain saponins and tannins

3. Benalu (*Loranthus*, Spec. div.). Family: Loranthaceae

Description :

Benalu (loranthus) is a type of plant whose life does not require soil media. It lives as a parasite (parasite), clinging to the branches of other wood trees and sucking minerals that dissolve in the wood tree to which it is attached can die. The flowers of unisexual parasite seeds contain sap. Breeding through animals or birds that eat the seeds of the parasite fruit. The breeding process is very simple: the gummy seeds of the parasite are eaten by animals or birds. Then the seeds of the parasite are attached to the branches of the wood along with the droppings of the birds that eat them, and grow on the branches.

Composition :

Chemical Ingredients: Parasites attached to certain plants, such as tea (*Camellia Sinensis* from the Theaceae plant family) based on experience can be used as anti-cancer drugs. Meanwhile, parasites attached to lime trees (*Citrus aurantifolia* from the plant family Rutaceae) can be used as medicinal

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ingredients for tonsillitis and common types of parasites can be used as measles medicine. Scientific studies have not been carried out. Research conducted by Repi and Mokosuli 2012, found a high content of alkaloid, flavonoid and steroid phytochemical groups in langsat and mango parasites.

4. Kunyit / Turmeric (*Curcuma domestica* Val.)

Plant Description:

Turmeric is a medicinal plant in the form of a shrub and is annual (perennial) which is spread throughout the tropics. Turmeric plants thrive and wild around the forest/former garden. It is estimated that it came from Binar at an altitude of 1300-1600 m above sea level, some say that turmeric comes from India. The word Curcuma comes from the Arabic Kurkum and the Greek Karkom. In 77-78 BC, Dioscorides referred to this plant as Cyperus resembling ginger, but bitter, chelating, and slightly pungent, but not poisonous. This plant is widely cultivated in South Asia, especially in India, South China, Taiwan, Indonesia (Java), and the Philippines.

Turmeric plants grow branched with a height of 40-100 cm. The stem is a pseudo-stem, erect, round, forming a rhizome with a yellowish green color and composed of leaf midrib (rather soft). Single leaf, oval shape (lanceolate) extending up to 10-40 cm, 8-12.5 cm wide and pinnate bone with a pale green color. Compound flowers that are hairy and scaly from pseudo-stem shoots, 10-15 cm long with a crown of about 3 cm and 1.5 cm wide, white/yellowish. The tips and bases of the leaves are pointed, the edges of the leaves are flat. The outer skin of the rhizome is brownish orange, the flesh of the fruit is yellowish-orange red.

Chemical Content: Turmeric rhizome contains essential oils with compounds including fellandrene, sabinene, cineol, borneol, zingiberene, curcumene, turmeron, kamfene, camphor, sesquiterpene, kafrilic acid, methoxycinnamic acid, tolilmethyl carbinol. In addition, turmeric rhizome also contains flour and dyes containing curcumin alkaloids.

Pharmacological Effects and Research Results: Typical aromatic odor. Slightly bitter taste, slightly spicy, cool, non-toxic. Smooth blood and vital energy, remove blockages, laxative menstruation (emenagogue), anti-inflammatory (anti-inflammatory), facilitate childbirth, laxative fart, anti-bacterial, facilitate the expenditure of bile (cholagogum), astringent.

5. Temulawak (*Curcuma xanthorrhiza* Roxb.)

Plant Description

Temulawak is a medicinal plant in the form of pseudo-trunked clumps. In the area of West Java, temulawak is known as koneng gede, while in Madura it is referred to as temu radish. The Indo-Malaysia region is the place from which this temulawak spread throughout the world. Currently this plant in addition to Southeast Asia can also be found in China, IndoChina, Bardabos, India, Japan, Korea, in the United States and several European countries.

Pseudo-trunked herb plant with a height of more than 1 m but less than 2 m, green or dark brown.

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The roots of the rhizome are perfectly formed and strongly branched, dark green in color. Each stem has leaves 2-9 strands with a circular shape extending to a lanceolate shape, leaf color is green or light purplish brown to dark, leaf length 31-84cm and width 10-18 cm, petiole length including strands 43-80 cm. Lateral inflorescence, slender stalks and striped scales, stalk 9 – 23cm long and 4 – 6 cm wide, numerous protective leaves that exceed or are comparable to the corolla. The white flower petals are hairy, 8 – 13mm long, the corolla is tubular with an overall length of 4.5cm, the white elongated circular flower blade with dice red or red ends, 1.25 – 2cm long and 1cm wide.

Chemical Content: The rhizomes contain essential oils, among others, consisting of mirsen, p-toluyl methyl carbinol, curcumin, desmethoxy curcumin, bidesmethyl curcumin, felandren, sabinene, cineol, borneol, zingiberen, turmeron, atlanton, artumeron, xanthorrizol, and germacron.

6. Kayu Manis / Cinnamon (*Cinnamomum burmannii* (Ness.) Bl)

Plant Description

Cinnamon plant height ranges from 5-15 m, the bark of the tree is dark gray with a distinctive smell, the wood is red-brown. Single leaf, stiff like skin, alternate location, petiole 0.5 – 1.5 cm long, with 3 leaf bones that grow curved. The shape of the leaves is an elongated ellipse, 4-14 cm long, 1.5-6 cm wide, pointed tip, flat edge, smooth top surface is green, the bottom surface is grayish powdery.

Young leaves are pale red. The flowers are androgynous or perfect flowers with a yellow color. The size is small. There are 6 petals in two sets. This flower is not titled flower. The stamens are 12 strands strung together in four groups, the stamen bears four. Persariann takes place with the help of insects. The fruit is a buni with one seed and flesh. The shape is round and elongated. The color of the young fruit is dark green and the old fruit is dark purple. The length of the fruit is about 1.3 – 1.6 cm, and the diameter is 0.35 – 0.75 cm. Seed length 0.84 – 1.32 cm and diameter 0.59 – .68 cm

Chemical Content: Cinnamon contains essential oils, eugenol, safrole, cinnamaldehyde, tannin, calcium oxalate, resin, tanning substances.

Pharmacological Effects and Research Results: Cinnamon has pharmacological effects as follows: laxative fart (carminative), laxative sweat (diaphoretic), antirheumatic, increase appetite (stomakik), relieve pain (analgesic). The chemical nature is spicy, slightly sweet, warm and fragrant. Several studies have reported that cinnamon has anticancer potential by inhibiting the topoisomerase enzyme in cells in vitro.

7. Kumis Kucing (*Orthosiphon aristatus* (Bl) Miq)

Plant Description

Kumis kucing are herbaceous plants with wet trunks, growing upright, and 1 – 2 m high. The stem of the kumis kucing is rectangular, slightly grooved, hairy short or glabrous, roots appear on the lower stems. Kumis kucing leaf is a single leaf, oval, lanceolate or rhombic with a length of between 4-10 cm and a width of 5-7.5 mm. Leaf veins along the edges are hairy or glabrous and both surfaces are mottled

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due to the presence of essential oil glands, irregular rough leaf blades. Kumis kucing flowers are compound flowers, arranged in bunches, coming out of the ends of the branches. Flowers 7 – 29 cm long, covered by short, purple hairs that eventually turn white. The stamens are longer than the flower tube. The fruit is in the form of a box fruit, oval, green when young, brown when old. Seeds are small, young are green after they are black.

Chemical Content: Kumis kucing contain orthosiphonen glycosides, tanning substances, essential oils, fatty oils, saponins, sapophones, potassium salts, myoinositol, sinensetin, organic acids and tannins.

Pharmacological Effects and Research Results: Kumis kucing have anti-inflammatory pharmacological effects, bladder infections, urinary tract stones and bile, gout, urinary stones, vaginal discharge, laxative urine (diuretic).

8. Kembang Sepatu / Hibiscus (*Hibiscus rosasinensis* L.)

Plant Description

Hibiscus is a plant native to the tropics in the plains of Asia. This plant then spread in various countries, from the Far East to Europe. Hibiscus is a shrub with a height ranging from 4 m - 8 m. Stem hard structure, many branched. The roots are deep and strong enough so that the stems grow upright and sturdy. The leaves are single leaves, oval or heart-shaped with jagged edges, tapered leaf tips, finger veins and pinnate leaves, have a supporting leaf. The leaves are green, leaf length 5-10 cm and width 3, - 7.5 cm. Single-flowered hibiscus that emerges from the leaf axils, flower stalks 1-4 cm long, and dangles with five crowns arranged in the shape of a trumpet or bell. Single or double flower crowns, flower colors vary, for example white, yellow, pink, orange and a combination of these colors. Flowering lasts all year round. Flowers only last 1-2 days to bloom. Flowers are composed of 5 calyxes, 5 flower crowns, 15 stamens and 1 ovary that has a lot of space. The pollination process produces fruit that contains many seeds. Seed hibiscus sized small, brown to black and hairy.

Chemical Content: The chemical content of hibiscus flowers is cyaniding-diglucoside, hibisetin, bitter substances and mucus. The chemical content of the leaves is taraxeryl acetate.

9. Mengkudu / Noni (*Morinda citrifolia* L.)

Plant Description

Noni is a plant native to Indonesia, spreading from tropical Asia to Polynesia. Noni is a type of coffee, can grow from lowland areas to an altitude of 1,500 m above ground level. This plant has a height of 3-8 m, many branches with rectangular twigs. The leaves are oppositely crossed, have petioles, oval to elliptical in shape, 10-40 cm long, 5-17 cm wide, thick, glossy, flat edge, pointed tip, narrow base, pinnate leaf bone, dark green color. Flowers out of the leaf axils, 5-8 in a weevil-shaped bouquet, with a tubular crown, trumpet-like shape, white. Flowers smell good. Noni fruit is stemmed, oval in shape, in the form of a buni fruit compound that gathers together as a large fruit. Fruit 5 – 10 cm long, bumpy uneven surface, green color, fleshy and juicy when ripe, pale or dirty yellow skin color, foul smelling, contains

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many black seeds.

The pharmacological effect of noni is to remove moisture in the body, increase bone strength, blood purifier, laxative urine (diuretic), menstrual laxative (emenagogue), skin softener, cough medicine, worm medicine (anthelmintic), laxative, antiseptic.

10. Lime (*Citrus aurantifolia*, Swingle.); Family: Rutaceae

Description :

Lime (*Citrus aurantifolia*) is one type of citrus Geruk. Lime is a type of herbaceous plant that has many branches and twigs. The trunk of the tree is tough and tough. While the outer surface of the skin is old and dull. Lime plants at the age of 2 1/2 years have begun to bear fruit. The flowers are small, white in color and the fruit is round as big as a ping pong ball and the color (outer skin) is green or yellowish. Old lime fruit tastes sour. Citrus plants generally like places that can get direct sunlight. 1. Growing Conditions a. Climate · Altitude : 200 m - 1,300 m above sea level · Annual rainfall : 1,000 mm - 1,500 mm/year · Wet months (above 100 mm/month): 5 months - 12 months · Dry months (below 60 mm/month): 0 months - 6 months · Air temperature: 200 C - 300 C · Humidity: medium - high · Radiation: moderate b. Soil · Type: latosol, alluvial, andosol. · Texture: loamy sandy loam and loam · Drainage: good · Groundwater depth: 40 cm - 170 cm from the soil surface · Root depth: below 40 cm from the soil surface · Acidity (pH): 4 - 9 · Fertility: medium - height 2. Planting Guidelines a. Tillage · Make a planting hole measuring 50 cm x 50 cm x 40 cm. · The top soil is separated from the soil below, then given manure. The bottom soil is put back in, then the top soil is followed. b. Preparation of Seeds · Lime can be propagated by grafting and grafting. c. Planting · Seedlings are planted in the planting holes that have been provided. · Planting distance 6 m x 6 m.

Treatable Diseases: Tonsils, Malaria, Piles, Shortness of Breath, Influenza, Cough; Hot pain, Constipation, Late menstruation, stomach cramps during menstruation; Dysentery, Stomach Heartburn, Stomach Nausea, Fatigue, Body odor, Wrinkles on the face

11. Kucing-kucingan (*Acalypha indica* L.); Family: Euphorbiaceae

Description

Kucing-kucingan are weeds that are very commonly found growing wild on roadsides, grass fields, or on mountain slopes. Annual herb, erect, 30-50 cm high, branched with coarse longitudinal lines, fine hair. Single leaf, long-stemmed, scattered location. Leaf blade ovate to lanceolate, thin, pointed tip and base, serrated edge, 2.5-8 cm long, 1.5-3.5 cm wide, green. Compound flowers, unisexual, out of leaf axils, small, in a series of grain-shaped. The fruit is a square, round, black fruit. Seeds oblong, brown. The roots are taproot, dirty white. The root of this plant is very liked by cats and dogs, which is consumed by chewing. Kucing-kucingan can be propagated by seeds

Treatable Diseases: Bitter taste, cool, astringent. This herb has anti-inflammatory properties, antibiotics, laxative urine (diuretic), laxative, and stops bleeding (hemostasis).

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12. Tamarind (*Tamarindus indica*, Linn.) Family : Leguminosae

General Description

Tamarind (*tamarindus indica*) is a tropical cultivar and includes legumes. The tree trunk is hard enough to grow big and the leaves are shady. The tree trunk is hard enough to grow big and the leaves are shady. Tamarind leaves are long-stemmed, about 17 cm and even-finned. The flowers are reddish yellow and the pods are brown with a characteristic sour taste. Inside the pod, besides the skin that wraps around the flesh, there are also 2-5 seeds which are flat in shape with a slightly blackish brown color.

Treatable Diseases: Asthma, cough, fever, fever, rheumatism, stomach pain, morbili; Allergies/biduren, canker sores, new wounds, ulcers, eczema, boils; Swelling stung by centipedes/bees, Snake bites, Hair loss.

General Discussion

Medicinal plants are defined as plant species in which part, all of the plant and or plant exudates are used as drugs, ingredients, or medicinal ingredients. Other experts classify medicinal plants into three groups, namely:

1. Traditional medicinal plants are plant species that are known or believed by the public to have medicinal properties and have been used as raw materials for traditional medicines.
2. Modern medicinal plants are plant species that have been scientifically proven to contain compounds or bioactive ingredients that have medicinal properties and their use can be medically justified.
3. Potential medicinal plants are plant species that are suspected to contain or have bioactive compounds or ingredients with medicinal properties but have not been proven to be used in a medical-scientific manner as medicinal ingredients.

From the results of the study obtained data that the Minahasa community, especially in the Tareran sub-district, has known medicinal plants for a long time. Knowledge of medicinal plants is obtained from generation to generation. However, intensive cultivation of medicinal plants has not been carried out. The cultivation of medicinal plants is only carried out by certain people for their own consumption. People generally do not know the efficacy of medicinal plants scientifically. This causes some people to hesitate to take advantage of these medicinal plants.

In terms of the use of medicinal plants, the economically weak community uses medicinal plants more than the middle to upper economic community. In fact, there are more doubts about the efficacy of medicinal plants in the middle and upper economic community. The use of medicinal plants in the middle to upper economic community is only carried out by the elderly (elderly).

CONCLUSION

1. In Tareran District there are many types of plants used as medicinal plants for degenerative diseases, including: Cinnamon (hypertension), Mengkudu (Diabetes), Temulawak (hyperlipidemia).

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2. The community has not cultivated medicinal plants intensively.
3. Public knowledge of the scientific efficacy of medicinal plants is still very little so that it affects the utilization of these medicinal plants.
4. In terms of the use of medicinal plants, the economically weak people use medicinal plants more than the middle and upper class economic communities. In fact, there are more doubts about the efficacy of medicinal plants in the middle to upper economic community. The use of medicinal plants in the middle to upper economic community is only carried out by the elderly (elderly).

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