

Overview of Vietnamese traditional medicine

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본문은 베트남의 전통식물자원중 의학소재나 건강기능성 식품소재로 활용되고 있는 유용 식물에 대해 소개한 것입니다. 내용 및 기타 문의사항은 식물자원연구팀 한대석 박사님께 문의하시기 바랍니다.

Nowaday, in Vietnam there are two types of medical services which have coexisted. These are Western medicine or Tay Y and Eastern medicine or Dong Y (this is also known as Oriental medicine). Dong Y is includes Chinese traditional medicine (TCM) or Thuoc Bac and Vietnamese traditional medicine (TVM) or Thuoc nam. In its'history, Vietnam was dominated by feudal China in more than 1000 years, so that Vietnamese people was impacted much by Chinese thought, culture and medicine of course. Traditional Chinese and Traditional Vietnamese Medicine differ in practice, though they share the same theoretical foundation. Their relationship can be observed by the influence of TCM theories on the TVM which are Yin and Yang, Five Elements. In practice, TCM practitioners usually spend more time giving their patients a sort of theoretical explanation of what's going on, whereas TVM practitioners would use a more practical approach and concentrate less on theory. TVM was popular in common life of working people, generally using ingredients readily available nearby and involving a minimum of processing. Most knowledge was passed unselfconsciously from one generation to the next. It can be said that Vietnamese people are based on theories of TCM and available tropical plants and animals native to Vietnam to built and develop TVM with it's own character. The following are some plants are using in normal life of Vietnamese people as food or drink with well-being effect(1,2).

1. Sen (Lotus)



Fig 1. *Nelumbo nucifera* Gaernt, *Nelumbonaceae*

Sen is popular and familiar plant Vietnam, it was seem the symbol of country in the world.

People usually use seeds of Sen plant (Semen Nelumbinis) as sweetened porridge. According to traditional experience, the seeds can treat stress, disorder digestion, diarrhea, sleeplessness. It is a tonic and delicious food. Seeds contain primarily starch (polysaccharide including amylose and amylopectin). Other study show that Nelumbinis

Semen increases the serotonin levels normally decreased in depression, resulting in an enhancement of central serotonergic transmission and possible therapeutic action in depression. It is suggested that Nelumbinis Semen may present an antidepressant effect through enhancement of serotonin(3).

The bud of Sen plant which is inside seed (embryo Nelumbinis) has effect of treating stress and sleeplessness. Bud contain some type of alkaloid which are identified such as lotusine, nuciferine, pronuciferine, liensinine, isoliensinine and neferine(4). People usually extract active compound in Sen bud and drink as tea.

The green leaf of Sen plant (Folium Nelumbinis) are cooked with rice as soup or extracted by water, This food have effect of anti-hyperlipidemia, reducing content of cholesterol, anti-obesity, and might anti-stress. Many alkaloids were isolated and identified in Sen leaf, such as: nuciferine, roemerin, anonain.

2. San Day



Fig 2. *Pueraria thomsonii* Benth, Fabaceae

The part used as medicine are root (Radix Pueraria) of San Day plant (*Pueraria thomsonii* Benth, Fabaceae) contain a lot starch and some

isoflavonoid compound, such as puerarin, daidzin, daizein, formonein. People usually extract starch of San Day and use as drink with sugar, This drink make people do not feel thirsty in hot summer days, it can treat high- fever with headache, and pimple in the body going out soon. Drink of starch of San Day is traditional refreshment water in Vietnam.

Vietnamese people have experience of using San day's root to detoxicate wine of drunk people. Getting one fresh root, grind up, add some pure water, press and fill, give extract water to people who is drunk, the patient will get well soon.

3. Gac



Fig 3. *Momordica cochinchinensis* Cucurbitaceae

The part used as medicine are fruit of Gac plant (*Momordica cochinchinensis* Cucurbitaceae). Gac is a plentiful fruit in Vietnam, it is cooked with sticky rice as a famous and delicious food. In addition, it is a worth medicine. Extraction of fruit, seed, root and Gac attar have extremely good effect to treat some disease.

Gac contains a high content of carotenoid, lycopene, and fatty acid (5). Gac's extraction can prevent and treat the short of vitamin A, other

risk of eye's disease, moderate content of lipid in blood, prevent obesity. Some recent study show the inhibition of tumor growth and angiogenesis by water extract of Gac fruit (6), Antioxidative effect of a chymotrypsin inhibitor from *Momordica cochinchinensis* (Cucurbitaceae) seeds in a primary rat hepatocyte culture (7). Other study show that Gac's oil with β -caroren, lycopene, alphatocoferol.....have effect of prevention cancer. Compounds in Gac fruit also protect skin from being darken, make it smooth and stronger.

In addition, traditional medicine use the ethanol extract of seeds to treat congestion of blood after wound, pain in bone and arthritis by rub outside skin of wounded area.

4. Oi (guava)



Fig 4. *Psidium guajava* L. *Myrtaceae*

The parts used as medicine are bud, young and tender leaves of Oi tree (*Psidium guajava* L. *Myrtaceae*). In Vietnam, Oi is a small plant which lives long time and gives fruits every year. It has spreading branches and smooth bark, the leathery leaves are opposite oblong-elliptic and have pronounced veins. When crushed they are aromatic. The flowers are white and

somewhat fragrant. The fruit has a distinctive fresh aroma with a sweet musk odor and the vitamin C content is higher than in citrus.(8) Bud, young and tender leaves is a effective medicine to treat disorder digestive symptom especially diarrhea and dysentery. In Oi leaf, there is a big amount of tannin at 8-9%. When have diarrhea cause of eating, people usually eat or drink extract of young leaf, it can wipe out disease bacteria in stomach and intestine system, diarrhea will finish soon. So that, Oi is planted in almost Vietnamese family in countryside area as a delicious fruit tree and medicine.

5. Tao Meo or Son Tra (sour apple)



Fig 5. *Diospyros indica* (Wall.) Decne. *Rosaceae*

The part used as medicine are fruit of TaoMeo plant (*Diospyros indica* (Wall) Decne. *Rosaceae*). This plant is grown well in the North-East of Vietnam, after harvest almost family process Tao Meo as pickled fruit to make a tonic and delicious drink for summer. The extract water has light sour taste, aromatic smell, pink colour, it makes people do not feel thirsty and digestion process better.

Active compounds in Tao Meo fruit have effect on heart muscle, they make heart muscle

stronger, raise up cardiac output in heart's artery, anti-thrombosis. This fruit is used to prevent and treat heart disease like high blood pressure, bradycardia, heart failure. Besides, Tao Meo fruit has effect of treating digestive disease. Digestive troubles, dyspepsia, diarrhea are treated by this medicine. Some studies in Vietnam show the effect of reducing content cholesterol, triglycerides content of fruit's extract so they explain the effect of anti-obesity of this fruit by traditional medicine. People usually drink extract of 15 g Tao Meo fruit and 20 g leaf of lotus (*Folium Nelumbinis*) everyday instead of tea, it is useful for people who have obesity and high blood pressure accompanying headache, dizziness, dizzy.

6. Muop Dang (Bitter melon)

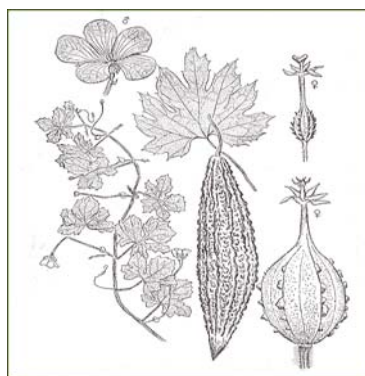


Fig 6. *Momordica charantia* L. *curcubitaceae*

The part used as medicine are fruit of Muop Dang plant (*Momordica charantia* L. *Curcubitaceae*). Muop Dang is a perennial tropical vine, the fruit is edible when harvested green and cooked. The taste is bitter. Muop Dang has twice the potassium of bananas and is also rich in vitamin A and C(9) The fruit contains ascorbigen, a bound form of ascorbic acid released by heating with water in an atmosphere of carbon dioxide or nitrogen. Large sized fruits, borne by certain types of *Momordica charantia*, are richer in ascorbigen than small fruits borne by other cultivated types(10). The free amino acids present in the fruit are: aspartic acid, serine, glutamic acid, threonine, alanine, g-amino butyric acid and pipercolic acid. The green fruit contains luteolin. Carotene is the principal pigment of carpels, while lycopene characterizes the red aril (11). The fruits and seeds of *Momordica charantia* yielded a polypeptide (mp 240°), viz. p-Insulin, which was considered to be similar to bovine insulin (12).

Bitter melon seems to be supportive in HIV, several proteins (such as alpha - and beta momocharin) have HIV inhibitory effects in vitro. However, they are not cytotoxic. Lectins from bitter melon have shown good antilipolytic - and lipogenic activity. MAP 30 is a specific protein in bitter melon, that is useful in treating HIV infection. The MAP30 extract has a cytostatic effect on MDA - MB - 231 human breast cancer cells xenografted into mice. MAP30 also demonstrates dose - dependent inhibition of HIV - 1 integrase leading to poor viral DNA integration, thus inhibiting T lymphocyte and

monocytes(9).

Scientific study show many effect of Muop Dang, these are: Antibiotic, Antitumor activity (constituents lutein and lycopene), Antiviral, Aphrodisiac, Decreases cGMP: cAMP ratio, Increases tissue uptake of glucose (due to charantin), Immunosuppressive (modulating activity of T and B lymphocytes and suppressing macrophage activity), Inhibits corticotropin - induced lipolysis, Insulinomimetic, Hypotensive, Laxative, Lowers blood glucose, Stimulates lipogenesis, Vermifuge. Among these above effect, lowering blood glucose is the most interested in. Muop Dang's fruit can treat diabetes type II in patient who at first period. It has been proven to increase the number of beta cells (those which produce insulin) in the pancreas and is natural support for diabetics. Vicine, charantin and polypeptide - P in both animals and humans increase glucose uptake and glycogen synthesis in the liver, muscle and adipose tissue and improve glucose tolerance. Studies with hepatic enzymes in mice revealed reduction in glucose-6- phosphatase and fructose - 1,6 - bisphosphatase activity and increased glucose oxidation by G6PDH pathway(9).

In traditional medicine this fruit also is used as an appetite stimulant, as an external medicine for treating allergy, heatrash, itch. People usually harvest green fruits, cook with meat and eat in normal meals as a delicious food or drink water extract. For reserve, after harvest, fruit is sliced up then dried and grinded. This powder is used every day in long time.

7. Du du (papaya)



Fig 7. *Caria papaya L. Caricaceae*

The part used as medicine are fruit, seed and leaf of Du du plant (*Caria papaya L. Caricaceae*). Papaya tree grow well in almost tropical country, in Vietnam it is named Du Du. Du du tree gives fruits all year round, fruit has oblong-elliptic shape, the crude fruits are green and when ripe they turn to yellow or light red. Ripe fruit is sweet and aromatic.

Papaya fruit is high in Vitamin A, Vitamin C, and Potassium. Papaya fruit also contains smaller amounts of calcium, iron, niacin, riboflavin, and thiamine. It is a tonic food for body. Eating Papaya fruit frequently fosters blood, prevents liver from hepatotoxicities (14) and recovers liver function of malaria patient.

The latex of the papaya plant and its green fruits contains two proteolytic enzymes, papain and chymopapain. The latter is most abundant

but papain is twice as potent(13). In ripe fruit latex exists little or does not exist. Papain is a protein-cleaving enzyme. The most interesting constituent of Papaya fruit, however, is papain. Papain is an enzyme that aids in the digestion of protein. Papain is often used as a meat tenderizer(13). People usually add some slices of green Papaya fruit with animal meat when stewing, it will make the meat tender soon. The woman who has baby will have more milk when eating stew meat of pig's leg with green Papaya fruit. It because of papain has clotting milk effect.

Recently, studies have shown that Papaya fruit has antibacterial and antifungal properties (13). When have pimples on skin, people get one green fruit, grind then cover the areas where have pimples. Pimples will go out soon.

In India, Malaysia, it is applied on the uterus as an irritant to cause abortion. The unripe fruit is sometimes hazardously ingested to achieve abortion. Seeds, too, may bring on abortion.(13) Recently scientists explain the abortifacient effect due to destroying progesterol of Papaya latex (a hormone help embryo develop).

8. Nghe



Fig 8. *Curcuma longa* L. Zingiberaceae

How do you think about this plant?

All above is some of thousands of Vietnamese traditional medicine. Vietnam is a tropical country with a plentiful and varied ecosystem, Vietnamese people are inherited a large experience legacy of previous generations about traditional medicine. Although Vietnamese government intends to develop harmoniously Eastern and Southern medicine but due to deficiency of needed equipment. Up to now, many traditional medicine are known only by experience but there is not any scientific research on mechanism of effect. Thus, every study is continuously being done and the help and collaboration of modern laboratory in the world are necessary.

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