

Ethnobotanical studies on medicinal plants used by the Red-headed Yao People in Jinping, Yunnan Province, China

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Abstract

Sixty-six medicinal plant species traditionally collected and used by the Red-headed Yao people in Jinping county, Yunnan Province, SW China, were investigated and studied through the approaches of ethnobotany, anthropology and participatory rural appraisal (PRA). Among these plants, 27 species were recorded to have medicinal values for the first time recorded in literature, 23 species were found to have different medicinal functions from those recorded in the literature. Many medicinal herbs are simultaneously wild food plants. The local Yao people take medicinal baths on some special days very common to treat and prevent diseases. The Red-headed Yao medicinal herb doctors have conserved medicinal plants and their habitats over the years. Most of the folk healers are old women, who are concerned about passing on their secrets to the younger generation. They fear that the younger generations have not learned enough about the herbal traditions to keep the practice going. The authors suggest that plants used by the Red-headed Yao people need to be further studied phytochemically and pharmacologically. © 2003 Elsevier Ireland Ltd. All rights reserved.

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1. Introduction

The second half of the twentieth century has seen a gradual loss in the value of plants in therapeutics and, as a consequence, the interest in the use of plants in therapy has also decreased. Nevertheless, research in this field has increased. What is evident is that popular knowledge on the medicinal uses of plants has not disappeared. It exists, but each day it becomes weaker and we must make an effort to inventory what [Schultes \(1991\)](#) recently called the prolific and promising treasure-trove of the ethnopharmacological knowledge, before it is too late. In industrialized countries, the erosion of popular information on plants is much faster than in developing ones ([Bonet et al., 1992](#)).

The Yao people are an ethnic group with a population of over seven million. They live in China, Vietnam, Laos, Thailand, France and the United States. The Yao people are one of the oldest nationalities in the south of China. They live in the mountains and the forests of Guangxi, Hunan, Guangdong, Yunnan and Guizhou ([Luo and Qing, 1994](#); [Dai and Li, 1995](#); [Dai and Qiu, 1997](#)). During the long history of

production, the Yao people have gradually grown to understand the nature and function of plants and animals. They have been using these plants and animals to prevent harm from poisonous insects, violent animals, diseases and poor living conditions for thousands of years. They have accumulated rich living experiences and created their own brilliant traditional medicine culture, which is a main part of their traditional knowledge ([Bai, 1990](#)). According to our field investigation and literature studies, the Yao people in Jinping of Yunnan Province have developed advanced technology of using medicinal plants and animals to treat diseases.

The Yao people have different branches. The Red-headed Yao is a main branch in Jinping. The Red-headed Yao mainly inhabit the mountains in Jinping county, Honghe Hani Autonomous Prefecture, Southeast Yunnan Province of Southwest China. It is located between 103°13'–103°23'E and 22°46'–22°54'N. It borders with Vietnam in the south. In this area, the majority of the population resides in remote villages where modern facilities are lacking. The elevation varies from 1020 to 2597 m. The climate here is sub-tropical, and the annual average temperature is 10.6 °C. Likewise the annual average rainfall is 3000 mm ([Xu and Xie, 1989](#)).

Unlike the Dai, Tibetan, Uigur and Mongolian in China, the Red-headed Yao people in Jinping do not have their own medicine theory yet. Their medicine is a form of folk

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medicinal practice. It is still in the stage of accumulating and improving medicinal knowledge. However, there are special features in diagnosing and curing diseases, as well as, administration in the Red-headed Yao people's medicine. It is interesting that there are some similarities between the Red-headed Yao people and other branches of Yao people in Guangxi and Hunan provinces although they are far from each other with a distance of over 1000 km. Major research results on medicinal plants from the Red-headed Yao society are concluded in the present paper.

2. Materials and methods

In 1996, we started to collect literature related to the Red-headed Yao people and traditional medicine. The literature was studied extensively (Mo, 1991; Waller, 1993; Luo and Qing, 1994; Dai and Li, 1995; Chen, 1998). A survey in seven districts of Jinping was performed six times during different seasons in a period of 3 years. We adopted anthropological methods, ethnobotanical methods and participatory rural appraisal methods in the field (Etkin, 1993; Lipp, 1989; Hedberg, 1993; Pei and Long, 1998). In each visit, plants were collected from different parts of the regions. Following methodology by Croom (1983), detailed field record was taken on the medicinal uses of the plants.

Information was obtained through general conversation with elderly villagers, local healers and herbalists at the time of each visit. Whenever possible, the conversations were recorded without the knowledge of the informant (Longuefosse and Nossin, 1996). Voucher specimens of 66 plants with medicinal uses were collected by the authors from the field (Martin, 1995). The parts of the plants used to treat diseases, types of diseases to be cured, doses, time and methods of administration were carefully recorded in the field (Alba and Brito, 1996).

All plants collected from the fields were identified intensively. The voucher specimens are deposited in the Voucher Herbarium at the Department of Ethnobotany, Kunming Institute of Botany, Chinese Academy of Sciences.

3. Results

As a result of rich flora in this region, a rich folk medicine is expected (Li, 1994). In general, the Red-headed Yao people use the most common and accessible plants. A large number of medicinal plants are cultivated spontaneously or subspontaneously in open areas, along lanes, or in bushland. Sixty-six medicinal plant species were collected and identified during the field investigation and herbarium studies. In Table 1, the medicinal plants are alphabetically arranged and the data are presented in the following sequences: number of collection of each plant, scientific name, family name, local name, part of plant used, method of preparation, the ailments for which medicine is given.

Sixty-six medicinal plant species belong to 43 families, and 61 genera. The family with the most species was Compositae (including seven medicinal plants), the second biggest family was Rubiaceae (including five species), and the third largest families were Rosaceae and Labiatae (each family has three medicinal plant species). The members of the four families altogether represent more than 27% of the total species of medicinal plants.

The medicinal functions of 27 species (41%) have never been recorded in the literature on medicinal plants of Jinping (Zeng, 1984; Luo, 1987; Huang, 1992; Zhu, 1995; Dai and Qiu, 1997). Those species include *Microsorium superficiale* (mainly for tummy bug and stomach convulsion), *Phymatodes lucida* (for stomachache and hepato-cirrhosis), *Illigera celebica* (for numbness of limbs), *Clematis chrysocoma* (mainly for dysmenorrhea), *Piper macropodum* (for rheumatoid arthritis), *Sarcandra hainanensis* (for osteoarthritis and arthritis), *Begonia cathayana* (mainly for bronchitis), *Begonia truncatiloba* (for ulcers), *Melastoma normale* (mainly for rheumatoid arthritis and cystitis), *Hypericum acmosepalum* (for quadriplegia), *Fragaria nilgerrensis* (for dysmenorrhea), *Ficus chapaensis* (for adynamia), *Sabia fasciculata* (for fracture and hysteria), *Helwingia japonica* (for diarrhoea), *Jasminum fuchsiaeifolium* (for rheumatoid arthritis), *Luculia intermedia* (mainly for tuberculosis), *Aeschynanthus bracteatus* (for rheumatoid arthritis), *Caryopteris paniculata* (for inflammation), *Elsholtzia fruticosa* (for diarrhoea), *Commelina diffusa* (for defervesce and detoxification), *Asparagus lycopodineus* (for cough), *Paris vietnamensis* (for themorrhoids), *Smilax mairei* (mainly for venereal disease), *Rhaphidophora decursiva* (mainly for fracture), *Iris decora* (for hemorrhoids and diarrhoea), *Dendrobium williamsonii* (for spermatorrhea) and *Carex baccans* (mainly for measles) (see Table 1).

The medicinal value of 23 species (35%) are noted in previous works but they are different in treatment of diseases and the parts used from these reported previously (Zeng, 1984; Luo, 1987; Huang, 1992; Zhu, 1995; Dai and Qiu, 1997). They are *Astilbe rivularis*, *Urena lobata*, *Hydrangea macrophylla*, *Potentilla kleiniana*, *Crotalaria ferruginea*, *Euodia lepta*, *Apium graveolens*, *Gaultheria leucocarpa*, *Embelia oblongifolia*, *Maesa indica*, *Uncaria sessilifructus*, *Valeriana jatamansi*, *Adenostemma lavenia*, *Gnaphalium affine*, *Senecio scandens*, *Lysimachia christinae*, *Plantago asiatica*, *Glechoma longituba*, *Leucas ciliata*, *Amomum tsaoko*, *Reineckia carnea*, *Acorus tatarinowii* and *Cymbidium hookerianum*.

The healing properties of some plants such as *Piper thomsonii*, *Rubus ellipticus* var. *obcordatus*, *Rubia mangith*, *Mussaenda laxiflora*, *Ligularia duciformis* and *Myriactis wallichii* are similar to those reported from other parts of the country (Luo, 1987; Huang, 1992; Zhu, 1995; Dai and Qiu, 1997).

There were several plant species with special uses. They are *Piper macropodum*, *Amaranthus lividus*, *Urena lobata*, *Rubus ellipticus* var. *obcordatus*, *Uncaria sessilifructus*,

Table 1
List of medicinal plants used by the Red-headed Yao people in Jinping of Yunnan Province, China

Number of collection	Scientific name	Family name	Local name	Part used	Preparation of administration	Popular uses or diseases treated
99048	<i>Acorus tatarinowii</i> Schott	Acoraceae	chan bou mang (chan bou duan)	Root, stem, whole plant	Decoction, alcoholic steeping, broth	Tched, bellyache, tummy bug, numbness of limbs, hemorrhoids, diarrhea, gall, injuries from falls, dysmenorrhea, invigorant
99033	<i>Adenostemma lavenia</i> (L.) Kuntze	Compositae	fa ha mi	Leaf, whole plant	Poultice	Flu, toothache, injuries from falls, hepatitis, pneumonia, quinsy, enteritis, lymphadenitis, tummy bug, tummy calculus, vesical calculus
99007	<i>Aeschynanthus bracteatus</i> Wall.	Gesneriaceae	di yang heng	Whole plant	Medicine bath, broth	Rheumatoid arthritis, constitutional, invigorant, health protection
99078	<i>Amaranthus lividus</i> L.	Amaranthaceae	gan jiang mi	Leaf, seed, whole plant	Decoction, broth	Diarrhea, mastitis, hemorrhoids, invigorant, adynamia
99068	<i>Amomum tsaoko</i> Crevost et Lemarie	Zingiberaceae	lao hao	Fruit	Decoction, poultice	Windy, diarrhea, hemorrhoids, vomit
99076	<i>Apium graveolens</i> L.	Umbelliferae	le jian si	Whole plant	Decoction, poultice, broth	Giddily, high blood pressure, urethritis, leucorrhea, injuries from falls, fracture, invigorant, adynamia
99067	<i>Asparagus lycopodineus</i> Wall. ex Baker	Ruscaceae	nie duai (le dao mu ku)	Root	Broth	Cough, invigorant
99040	<i>Astilbe rivularis</i> Buch.-Ham. Ex. D. Don	Saxifragaceae	xi gu lian	Root, stem, whole plant	Decoction, medicine bath	Rheumatoid arthritis, tummy bug, injuries from falls, windy
99051	<i>Begonia cathayana</i> Hemsl.	Begoniaceae	ge lang sui mi	Whole plant	Medicine bath, rubbing or massage	Bronchitis, quinsy, chincough, injuries from falls, numbness of limbs, bruise, burn, ulcer, gall
99011	<i>Begonia truncatiloba</i> Irmsch.	Begoniaceae	ge nan si	Whole plant	Rubbing or massage	Ulcer, gall
99066	<i>Bryophyllum pinnatum</i> (L. F.) Oken	Crassulaceae	da bu si (da bu su)	Whole plant, leaf	Medicine bath, rubbing or massage	Rheumatoid arthritis, tummy bug, injuries from falls, numbness of limbs, bruise, burn, ulcer, gall
99037	<i>Carex baccans</i> Nees	Cyperaceae	lou si	Root, stem, seed, whole plant	Decoction	Dysmenorrhea, leucorrhea, chincough, ulcer, measles, windy
99065	<i>Caryopteris paniculata</i> C. B. Clarke	Verbenaceae	mi zui	Root, whole plant	Decoction, medicine bath	Diarrhea, skin itch, diminish inflammation, acesodyne,
99021	<i>Clematis chrysocoma</i> Franch.	Ranunculaceae	di bang niao	Root, stem (little leaf)	Decoction, medicine bath	Nephritis, numbness of limbs, injuries from falls, lumbago, dysmenorrhea, health protection
99005	<i>Commelina diffusa</i> Burm. f.	Commelinaceae	di fang	Whole plant	Decoction	Defervesce and detoxification, leucorrhea, health protection
99025	<i>Crotalaria ferruginea</i> Grah. ex Benth	Papilionaceae	wong bong long duan (xiao wong bong long)	Whole plant	Decoction, alcoholic steeping	Giddily, deaf, tingle, dysmenorrhea, leucorrhea, asthma, colic, measles, hepatitis, nephritis, cystitis, quinsy, urethritis, parotitis, lymphadenitis, prostatitis, nephrolith, scour
99013	<i>Cymbidium hookerianum</i> Reichb. f.	Orchidaceae	gu diu bao	Bulb, seed	Decoction, alcoholic steeping	Bellyache, pulmonary tuberculosis, pneumonia, bronchitis, asthma, fracture
99073	<i>Dendrobium williamsonii</i> Day et Reichb. f.	Orchidaceae	yang cu	Stem, whole plant	Poultice	Adynamia, dyspepsia, spermatorrhea, numbness of limbs, injuries from falls, fracture
99079	<i>Disporopsis longifolia</i> Craib	Liliaceae	ge lin xin duan	Root, stem	Decoction, alcoholic steeping	Bellyache, adynamia, cough, pneumonia, asthma
99009	<i>Elsholtzia fruticosa</i> (D. Don) Reld.	Labiatae	mi zui	Root, leaf, whole plant	Decoction, poultice	Rheumatoid arthritis, ulcer, diarrhea, cough
99058	<i>Embelia oblongifolia</i> Hemsl.	Myrsinaceae	ze hu pei	Fruit, whole plant	Decoction, medicine bath	Dispel wind and dampness, numbness of limbs, injuries from falls
99023	<i>Euodia lepta</i> (Spreng.) Merr.	Rutaceae	bei la gong diang	Root, leaf	Medicine bath, poultice	Rheumatoid arthritis, sciatica, quadriplegia, flu, pneumonia, injuries from falls, gall, numbness of limbs
99069	<i>Ficus chapaensis</i> Gagnep.	Moraceae	deng di xiu (di xiu ang)	Root, stem, leaf	Medicine bath, broth	Invigorant, adynamia, giddily
99049	<i>Fragaria nilgerrensis</i> Schlecht.	Rosaceae	ying gou si	Whole plant	Decoction, broth	Cough, chincough, diarrhea, stomatitis, scar, numbness of limbs, dysmenorrhea

Table 1 (Continued)

Number of collection	Scientific name	Family name	Local name	Part used	Preparation of administration	Popular uses or diseases treated
99035	<i>Gaultheria leucocarpa</i> Bl. var. <i>crenulata</i> (Kurz) T. Z. Hsu	Ericaceae	jian cai za	Whole plant	Decoction, medicine bath	Rheumatoid arthritis, injuries from falls, numbness of limbs, tummy bug, flu, toothache, cough, constitutional,
99004	<i>Glechoma longituba</i> (Nakai) Kupr.	Labiatae	di pou (di bi)	Stem, leaf, whole plant	Decoction, medicine bath	Vesical calculus, calculus, injuries from falls, fracture, gall, cough, flu, diarrhea, dysmenorrhea, hysteritis, leucorrhea, bronchitis, scare, pneumonia, pulmonary tuberculosis
99041	<i>Gnaphalium affine</i> D. Don	Compositae	dou mei	Whole plant	Decoction	Cough, flu, numbness of limbs, quadriplegia, neurasthenic, sterility and dystocia
99060	<i>Helwingia japonica</i> (Thunb.) Dietr.	Cornaceae	ye shan hua	Leaf, fruit, whole plant	Decoction, poultice	Diarrhea, tummy bug, ulcer, viper bite, injuries from falls, fracture
99056	<i>Hemiphragma heterophyllum</i> Wall.	Scrophulariaceae	di bi	Whole plant	Decoction, poultice	Dysmenorrhea, pulmonary tuberculosis, quinsy, injuries from falls, lumbago, numbness of limbs, measles, ulcer, toothache
99057	<i>Hydrangea macrophylla</i> DC. f. <i>hortensis</i> Wils.	Hydrangeaceae	fang han mi	Root, stem, leaf, flower	Decoction	Fret, diarrhea, scare
99034	<i>Hypericum acmosepalum</i> N. Robson	Hypericaceae	xiang ge da	Root, stem	Decoction	Numbness of limbs, injuries from limbs, quadriplegia, arthritis, cough
99006	<i>Illigera celebica</i> Miq.	Hernandiaceae	jiao dai pei	Whole plant	Decoction, medicine bath	Numbness of limbs, injuries from falls, constitutional
99018	<i>Iris decora</i> Wall.	Iridaceae	xi le nie	Root, whole plant	Decoction, alcoholic steeping, poultice, broth	Cough, overwork, diminish inflammation, acesodyne, hemorrhoids, diarrhea
99019	<i>Iris wattii</i> Baker	Iridaceae	di you	Stem, whole plant	Decoction, alcoholic steeping	Hepatitis, dyspepsia, sterility and dystocia, windy, diuresis
99038	<i>Jasminum fuchsiaefolium</i> Gagnep.	Oleaceae	di rang eng	Whole plant	Medicine bath	Rheumatoid arthritis, injuries from falls, numbness of limbs, tummy bug, flu
99077	<i>Kalimeris indica</i> (L.) Sch.-Bip.	Compositae	ge si di (ge si mi)	Root, flower, whole plant	Decoction, poultice, broth	Flu, fever, cough, enteritis, hepatitis, windy, gall, injuries from falls, fracture, bellyache, kidney stone
99028	<i>Leucas ciliata</i> Benth.	Labiatae	mei long mi	Root, fruit, whole plant	Decoction, broth	Flu, numbness of limbs, diarrhea, dyspepsia, hemorrhoids, gall, fracture, pneumonia, health protection,
99075	<i>Ligularia duciformis</i> (C. Winkl.) Hand-Mazz.	Compositae	dang gui	Root, whole plant	Decoction, poultice, broth	Injuries from falls, fracture, invigorant, teched, sterilization, constitutional
99071	<i>Ligusticum brachylobum</i> Franch.	Umbelliferae	chun xiong	Root, whole plant	Decoction, poultice, broth	Flu, giddily, arthritis, injuries from falls, fracture, numbness of limbs, lockjaw, invigorant
99001	<i>Luculia intermedia</i> Hutch.	Rubiaceae	yang mei gong	Root, stem, leaf, flower, fruit, whole plant	Decoction, alcoholic steeping	Dysmenorrhea, numbness of limbs, injuries from falls, scare, viper bite, chincough, bronchitis, tuberculosis, paralysis, hepatitis
99044	<i>Lysimachia christinae</i> Hance	Primulaceae	guo lu huang	Whole plant	Decoction	Hepatitis, calculus, vesical calculus, bellyache, womb bleeding
99039	<i>Maesa indica</i> (Roxb.) A. DC.	Myrsinaceae	ji dai za (du dai za)	Whole plant, leaf	Decoction, poultice, medicine bath	Hepatitis, numbness of limbs
99008	<i>Melastoma normale</i> D. Don	Melastomaceae	gong shan si	Whole plant	Decoction	Bellyache, scour, diarrhea, enteritis, dyspepsia, leucorrhea, bronchitis, rheumatoid arthritis, cystitis, cough, injuries from falls
99002	<i>Microsorium superficiale</i> (Bl.) Ching	Polypodiaceae	hang bu	Whole plant	Decoction, alcoholic steeping	Tummy bug, stomach convulsion, gastric ulcer
99032	<i>Mussaenda erosa</i> Champ.	Rubiaceae	za jing pei	Stem, leaf, whole plant	Decoction	Bruise, ulcer, burn, numbness of limbs, venereal disease
99063	<i>Mussaenda laxiflora</i> Hutch.	Rubiaceae	deng zha jing	Whole plant	Decoction, alcoholic steeping	Numbness of limbs, injuries from falls, rheumatoid arthritis, arthritis, hemiplegia, bellyache
99072	<i>Myriactis wallichii</i> Less.	Compositae	ge si mi	Whole plant	Decoction, broth	Windy, sarcoma
99059	<i>Paris vietnamensis</i> (Takht.) H. Li	Trilliaceae	du guo lian	Root	Poultice	Ulcer, bruise, hemorrhoids
99052	<i>Phymatodes lucida</i> (Roxb.) ching	Polypodiaceae	han di	Main root	Decoction, alcoholic steeping, broth	Bellyache, windy, hepatocirrhosis

99050	<i>Piper macropodium</i> C. DC.	Piperaceae	lu bi	Whole plant (main root)	Decoction, alcoholic steeping	Rheumatoid arthritis, tummy bug, injuries from falls, windy, hysteritis
99012	<i>Piper thomsonii</i> (C. DC.) Hook. f.	Piperaceae	ji lao	Whole plant	Broth	Invigorant, galactopoietic, adynamia, overwork
99045	<i>Plantago asiatica</i> L.	Plantaginaceae	tang ze	Whole plant, seed	decoction, medicine bath, broth	high blood pressure, asthma, numbness of limbs, dysmenorrhea, invigorant
99024	<i>Potentilla kleiniana</i> Wight et Arn.	Rosaceae	ying gou si	whole plant	Decoction, broth, poultice	Flu, cough, parotitis, lymphadenitis, hepatitis, scare, numbness of limbs, dysmenorrhea, ulcer,
99030	<i>Reineckia carnea</i> (Andr.) Kundth	Liliaceae	di rang (ha di nie)	Stem, whole plant	Decoction, medicine bath, broth	Cough, asthma, nephritis, injuries from falls, rheumatoid arthritis, diminish inflammation, acesodyne, constitutional, invigorant
99042	<i>Rhaphidophora decursiva</i> (Roxb.) Schott	Araceae	shan shu long	Whole plant	Poultice, medicine bath	Flu, fracture, injuries from falls, rheumatoid arthritis, gall, hemorrhoids, diarrhea
99010	<i>Rhaphidophora lancifolia</i> Schott	Araceae	shan shu long	Whole plant	Poultice, medicine bath	Numbness of limbs, fracture, injuries from falls
99061	<i>Rubia mangith</i> Roxb. ex Fleming	Rubiaceae	ji jiao ko mi	Whole plant	Decoction	Hysteritis, bellyache, dyspepsia
99022	<i>Rubus ellipticus</i> var. <i>obcordatus</i> (Franch.) Focke.	Rosaceae	ying ge yang	Root	Decoction	Bellyache, department of gynaecology (hysteritis)
99062	<i>Sabia fasciculata</i> LECTE.	Sabiaceae	di zang	Whole plant	Decoction, medicine bath, broth	Numbness of limbs, injuries from falls, fracture, hysteritis, invigorant
99054	<i>Sarcandra hainanensis</i> (P'ei) Swamy et Bailey	Chloranthaceae	jiu jie feng	Whole plant	Broth	Numbness of limbs, osteoarthritis, arthritis, teched
99027	<i>Saussurea deltoidea</i> (DC.) C. B. Clarke	Compositae	deng duo bu ai	Root, leaf, whole plant	Decoction, medicine bath	Dyspepsia, windy, little milk, fracture, adynamia, tummy bug, numbness of limbs
99036	<i>Senecio scandens</i> Buch.-Ham ex D. Don	Compositae	qian li guan	Whole plant	Medicine bath	Bellyache, gall, measles, ulcer, hemorrhoids
99055	<i>Smilax mairei</i> Levl.	Smilacaceae	deng ji yang gong	Tuber	Decoction	Rheumatoid arthritis, tummy bug, dysmenorrhea, hemorrhoids, gall, venereal disease
99053	<i>Uncaria sessilifructus</i> Roxb.	Rubiaceae	ying diu	Root, leaf, whole plant	Decoction	Scare, teched, high blood pressure, giddily, bellyache, hysteritis, rheumatoid arthritis, arthritis, hemiplegia, sciatica, injuries from falls, ulcer
99020	<i>Urena lobata</i> Linn.	Malvaceae	guan jian	Root, leaf, whole plant	Decoction, rubbing or massage, poultice	Rheumatoid arthritis, cough, diarrhea, enteritis, mastitis, dyspepsia, leucorrhea, hysteritis, injuries from falls, viper bite
99026	<i>Valeriana jatamansi</i> Jones	Valerianaceae	di fiu hua	Root, stem, leaf, whole plant	Decoction, alcoholic steeping, medicine bath, broth	Windy, dyspepsia, scour, diarrhea, numbness of limbs, quadriplegia, injuries from falls, gall, fracture, ulcer

Lysimachia christinae, *Plantago asiatica*, *Glechoma longituba*, *Smilax mairei*, *Acorus tatarinowii* and *Carex baccans*. They are mixed up together and boiled for two to three hours. Then the patients can be bathed in this medicine water when it cools down. In the past, the local people took medicine bath every day. Today, following improvement of living conditions and medicinal technology, especially shortage of medicinal plant resources, the people have to reduce the number of medicine baths they take. At present, only for important traditional festivals of the Yao people such as the Dragon Boat Festival, Chong Yang Festival and Pan Wang Festival, do the local people take medicine baths. By this way, some gynaecology and obstetrics diseases can be treated effectively. It will be necessary to carry out phytochemical and pharmacological studies of these plants in order to verify the validity of these uses.

4. Discussions and conclusions

Knowledge of using plants as remedies is apparently the result of transmission from the old to the new generation. In spite of the socio-economic welfare, well-developed roads and medical facilities, the tradition of using plants for the treatment of some diseases still continues in the region. The Red-headed Yao medicinal herb doctors are already very old. The younger generations, however, have learned very little from the old healers. To prevent traditional medicinal knowledge from being lost, it is an extremely urgent task to collect and arrange that traditional knowledge and spread it throughout the Red-headed Yao societies (Rao, 1996).

On the protection and utilization of medicinal plant, the Red-Yao people have a rich experience. First, according to different seasons and climate conditions, the local people pick different parts of the medicinal plant to treat diseases. Second, when the local people pick medicinal plants, they do not pick the root to treat diseases. If only the root is needed for the cure, they invariably pick old roots and leave the new root so the plant can persist. Third, the Red-headed Yao medicinal herb doctors think it is important to protect big trees. By protecting the forest and the whole ecological environment they are providing an excellent natural environment for the growth of medicinal plants.

The Red-headed Yao women play an important role in the spread and utility of medicinal plants. The women can discriminate the medicinal plants and remember their functions and methods of disease treatment. The Red-headed Yao medicine can also treat some gynaecology and obstetrics effectively, it is convenient to the Red-headed Yao women to master the medicine and use it to treat diseases.

There are some plants such as *Phymatodes lucida*, *Piper thomsonii*, *Amaranthus lividus*, *Fragaria nilgerrensis*, *Potentilla kleiniana*, *Apium graveolens*, *Ligusticum brachylobum*, *Valeriana jatamansi*, *Kalimeris indica*, *Plantago asiatica* and *Amomum tsaoko*, which are not only used as

medicine to treat diseases, but also as food to supplement nutrition.

The Red-headed Yao's medicine is an experienced medicinal at practice. In the course of development, it was influenced deeply by religious culture and feudal superstition. It is an urgent problem to solve how to take effective measures to get rid of the binding of religious culture and feudal superstition to traditional knowledge and to progress towards regularization and science.

Under the pressure of poor living conditions, and a constant fight with the poor natural environment, poisonous insects, violent animals and diseases, they summed up a series of effective traditional medical knowledge. We should respect the traditional knowledge and protect their intellectual property right when we collect and arrange the folk culture knowledge (Posey, 1990). If it is possible, the nation should provide some preferential policy to encourage the Red-headed Yao doctors to spread their medicinal knowledge from generation to generation (Vagelos, 1991).

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