

武定基地中草药

云南白药

YUNNAN BAIYAO WUDING JIDI ZHONGCAOYAO

云南出版集团公司 云南科技出版社

云南白药集团股份有限公司 编撰



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我国著名的少数民族医药学家曲焕章先生创造的“云南白药”（前身“百宝丹”）已有百余年历史。解放后，国家对云南白药十分重视，建立起专门的生产工厂，同时着手云南白药原料植物的调查和人工栽培研究。经过几代白药人的研发和努力，“云南白药”不再是单一剂型、单一品种了，生产工艺技术也完成了向现代化的转型，声誉大为提升。

20世纪60年代，在云南省卫生厅领导下，开展云南白药原植物的调查，云南省药物研究所和昆明植物研究所等单位参加了调查，基本弄清云南白药原植物的种类和分布，为云南白药原植物的人工栽培提供了植物种类依据。

以野生植物为原料的云南白药，必然要对野生的原料植物进行人工栽培，这是持续发展的需要。像云南白药这类药物，品种多个，这类药物在不断发展。因此，在研究其栽培技术的同时，有必要对每一种植物进行化学、药理和生化等方面的深入研究，以弄清它们的来龙去脉。中草药的人工栽培，有就地栽培，也有异地种植，特别是异地种植者，更要重视其深入研究，以探其变化规律。

云南白药集团在武定关坡梁子建成种植基地，系统种植云南白药原植物和其他中草药，对深入研究云南白药原植物和其他中草药有很大的好处。

编纂的《云南白药武定基地中草药》介绍了基地种植的108种中草药植物，图文并茂，可看图识物，对普及中草药人工栽培和提高民众对中草药植物的兴趣，无疑是件好事。

总的来说，中草药原植物异名往往很多，不同的地方会有不一样的名称，常常辨认不清，应尽可能地将相近的种聚在一起，加以分析比较，分清异同，认准原植物，避免混乱。

是为序。

中国科学院院士 吴征镒



## 序





Yunnan Baiyao Powder was created over one hundred years ago by Mr. Qu Huanzhang, notable minority medical scientist, pharmacognosist in China. After liberation, Chinese government attached importance to Yunnan Baiyao Powder, and launched on investigation on the raw material plants of Yunnan Baiyao Powder, and on research on its artificial cultivation. After the researches and hard-working by people of Yunnan Baiyao company of several generations, Yunnan Baiyao Powder is no longer a single form, single specie, and its production techniques has been modernized and brought great reputation.

Under the leadership of Yunnan Provincial Bureau of Health in 1960s, investigations on original plants of Yunnan Baiyao Powder were carried out. Yunnan Institute of Material Medica and Kunming Institute of Botany had also participated in the investigations, and made clear the species and distribution of original plants of Yunnan Baiyao Powder, which supplies the plant species basis for the artificial cultivation of original plants of Yunnan Baiyao Powder.

It is the demand of sustainable development that to make artificial cultivation on wild original plants of Yunnan Baiyao Powder which is having wild plants as the raw materials. Medicines like Yunnan Baiyao Powder are of multi-species, and they are unceasingly developing. Therefore, it is necessary to make thorough chemical, pharmacological, and biochemical researches on every plant when researching cultivation techniques to better understand the plants. In situ cultivation and relocation planting are adopted in artificial cultivation of Chinese herbal medicine, intensive research should especially be given to the relocation planting to study the variation regulations.

The germ plasm cultivation base, established by Yunnan Baiyao Group Co., Ltd in Guanpo Liangzi, Wuding, systematically cultivates the original plants of Yunnan Baiyao Powder and other Chinese herbal medicine, and benefits the profound study on original plants of Yunnan Baiyao Powder and other Chinese herbal medicine.

*Chinese Herbal Medicine in Yunnan Baiyao Group Wuding TCM Germ Plasm Cultivation Base* edited introduces 108 Chinese herbal medicinal plants cultivated in the base by texts and pictures, and medicine could be recognized in accordance with the picture, which is good to the popularization of artificial cultivation of Chinese herbal medicine and to the enhancing of people's interests in Chinese herbal medicinal plants.

Generally speaking, original plant of Chinese herbal medicine has many synonyms in different places. Similar species shall be put together, be analyzed and distinguished to avoid confusion.

The end.

WU Zhengyi  
Academician  
Chinese Academy of Sciences



## 序一

科学的价值，不仅仅在于它能带来思维的变革或是一项新的技术、一类新的产品、一种新的方法，同时，它往往也会伴生一种新的文化现象和价值取向，通过阅读、学习和思考，为人类提供智慧与思辨的享受。植物学亦然。对植物的研究，不仅能为植物物种的繁衍、植物的开发利用带来理论和科学上的依据，同时，从另外的角度，也有着科普启蒙和审美欣赏的作用。

每一种植物都是一种生命的存在，每一种生命的存在，都有其独特的方式和价值。中国有三百多科、三千多属、三万多种的植物，其中云南就有1.2万余种，药用植物多达6500多种，“原本山川、极命草木”，如何合理开发利用好云南的天然植物资源？如何让这些丰富的植物资源发挥其最大的科学价值、经济价值、社会价值和文化价值，一直是植物学家和企业家共同关注的课题。

作为一个具有强烈社会责任感和公民意识的企业，云南白药集团股份有限公司在企业规模、效益持续快速增长、不断延伸天然药物产业链与价值链、打造中国中医药产业第一品牌的同时，注重科学发展、可持续发展，有效平衡中药材原料供应与生态环境、生物多样性保护的关系，促进经济效益、资源效益、环境效益和社会效益的共同提高。

早在2001年，云南白药集团就结合国家中药现代化产业基地战略的实施，前瞻性地在彝州武定建设基地，把产品生产“车间”前移，使产业链延伸到药材种植环节。在规范种植的同时，注重对云南重要、濒危、道地中药材的保护，逐步建立起道地中药材种质资源库（现已储备有200多种），试验种植了重楼、红豆杉、云黄连、云当归、岩白菜、黄草乌、金铁锁等60余种特色中药品种。其中，重楼属植物24种，当地已收集23种，保存了全世界最为齐全的重楼活体种质资源，具有极高的研究价值和社会价值。

选址楚雄彝族自治州武定县白路乡关坡梁子一带的云南白药集团武定基地，山峦起伏，林密草丰，沟壑纵横，水沛地宽。气候、生态、环境具有滇中高原典型的地貌特征。据调查，此生、此长、此种植的中草药品种近千种。奇花异草不仅护绿了荒山，更丰富了种植基地的药物内涵。

由云南白药集团组织科技人员，经过科学考察考证，历时一年多时间，编写完成了《云南白药武定基地中草药》，该书编写以基地药物为素材，实物标本为依据，结合现代研究内容，突出其中重点药物的描述或以名录介绍，可以引申阅读参考。融科普性、知识性、观赏性和认知感为一体，形式活泼、个性鲜明、图文并茂、相得益彰。如果通过此书能够引发植物学者对云南白药武定基地中草药的深度研究、或是激起普通读者对植物学的兴趣、带给大家美的享受，此书的价值就已得到了充分的体现。《云南白药武定基地中草药》无疑是云南地方植物和民族医药文化园地中一朵绚丽的奇葩，值得期待。

在此书问世之际，谨表贺诚以序之。

he value of the science is more than the revolution of thinking it brings, or a new technology, a new product, or a new method, meanwhile, as well as the new cultural phenomenon and value orientation it accompanies. Wisdom and mental analyze are enjoyed through reading, learning and thinking. Botany is the same. The study on the plants provides not only the theoretical and scientific bases on the breeding of plant species and development and utilization of the plant, simultaneously, functions such as scientific initiation and aesthetic appreciation.

Each plant is existence of life which has the unique pattern and value. There are over 300 family, 3,000 genera, and 30,000 species of plants in China, among which there are over 12,000 species and as many as 6,500 medicinal plants in Yunnan. “Distinguish the origins of all mountains and rivers, and recognize the names of all herbs and trees” . How to rationally utilize the natural plant resources in Yunnan? How to make the best use of the ultimate scientific, economic, social and cultural values of these abundant plant resources? These two topics are all the time paid close attention to by botanists and entrepreneurs.

As an enterprise with strong social responsibility and consciousness of citizenship, Yunnan Baiyao Group Co., Ltd. has been striving for the first brand in Chinese herbal medical industry through continual rapid increasing of enterprise scale and benefits, and unceasing extension of natural pharmaceutical industry chain and value chain, concurrently, scientific development and sustainable development are laid stress on to effectively balance the relationship between the supply of traditional Chinese medicinal materials supply and the protection of ecological environment and biodiversity so that to contribute to the joint enhancement of economic, resource, environmental and social benefits.

As early as in 2001, Yunnan Baiyao Group Co., Ltd had prospectively established a base in Wuding in light with the strategy of modern industrial base of national traditional Chinese medicine. In that case, the “workshop” of the products was transferred, and the industrial chain was extended to medicinal materials planting. While standardize planting, the protection of important, endangered, and authentic Chinese medicinal materials is laid emphasis on, and the authentic Chinese medicinal materials genetic resources base is generally established





(More than 200 species have been reserved until now). Beyond 60 special Chinese medicinal materials have been experimentally planted, such as *Paris*, *Taxus*, *Coptis teeta*, *Angelica sinensis*, *Bergenia purpurascens*, *Aconitum vilmorinianum*, and *psammosilene tunicoides*. There are 24 species of *Paris* in Yunnan, in this base 23 species has been collected, so the most complete *Paris* living genetic resources in the world are stored, which bears high research and social values.

Yunnan Baiyao Group TCM Germ Plasm Cultivation Co., Ltd locates in Guanpo Liangzi, Bailu town, Wuding County, Chuxiong, and its climate, ecology, and environment are of typical geomorphic features of middle Yunnan plateau, mountain by mountain, exuberant trees and grass, a crisscross network of gullies, abundant water and vast land. According to the investigation, nearly a thousand traditional Chinese herbal medicines are planted and grown locally. These exotic flowers and rare herbs not only protect and green the barren mountain, but also rich the medicinal materials in the planting base.

*Chinese Herbal Medicine in Yunnan Baiyao Group Wuding TCM Germ Plasm Cultivation Base* compiled by the scientists and engineers organized by Yunnan Baiyao Group Co., Ltd through over one year scientific investigation, having the medicinal materials in the base as the resource material, and having the specimens as the basis, combines the modern research contents, and lay stress on the description and catalog of the important medicines to extend reading references. The book well integrates popularization of science, knowledge, appreciation, and cognition by various forms, striking features, and excellent pictures and accompanying essays. The value of the book is given full expression if the thorough research by botanists on the Chinese herbal medicine in this base of Yunnan Baiyao group could be caused; the interests on botany could be aroused to general readers; the aesthetic treat could be brought about by the book. The book is undoubtedly an outstanding and a rare work on local plants and ethnic pharmaceutical culture in Yunnan, and is worth reading.

The introduction is written to sincerely congratulate on the publication of the book.

Ren Dequan



云南白药问世百余年来，历经沧桑、济世为民，拯救了无数大众百姓的性命，享有“伤科圣药”、“药冠南滇”的美誉。云南白药集团股份有限公司是云南省十户重点大型企业、云南省百强企业，也是首批国家创新型企业，云南白药商标被评为中国驰名商标，公司主要经济指标居行业首位，是中国中医药行业第一品牌。2009年，公司被评为“全国国有企业典型”，是历次评选中唯一入选的云南企业和医药行业企业。

云南白药关注企业与社会、环境的和谐发展，着力打造企业核心竞争力和可持续发展能力。为保证公司长远发展的药材需求，实现中药材种植的规范化、现代化，2001年，云南白药集团股份有限公司在云南省楚雄州武定县白路乡关坡梁子建立了中药材优质种源繁育有限责任公司，占地近2万亩，投资兴建了大型无公害中草药种植基地。与国内外、省内外高校及科研机构合作，搭建起一个可供野生中药材驯化、种植、试验和研究的技术平台，进行濒危稀缺中药材优质种源的繁育和中药材的栽培。目前栽培有重楼、黄草乌、金铁锁等多种著名、珍稀中草药和云南民族民间药用植物，成为以中草药和云南民族民间药，特别是彝族药为主要品种的中草药栽培基地和中药材优质种源繁育基地。基地内草木葳蕤，藤蔓纵横，现代化温室、棚架点缀其间，奇花异草俯首皆是。基地优越的自然环境中，还分布了大量的原生态中草药资源。

随着科学技术进步和云药产业发展，中医药和云南民族民间医药越来越受到重视，为了更好地宣传、保护、发展和利用中草药及民族民间药物资源，现对基地中草药资源进行调查、分类、整理，编纂出版《云南白药武定基地中草药》一书。本书特选取了基地108种中草药，进行详细地描述。每种药物配有原植物生态彩色图片、植物花或果特写照片、药材照片及植物来源、形态特征、性味功效、主要化学成分和药理作用、资源情况等文字描述。并附有在基地生长的900余种中草药植物拉丁学名索引。从而直观、生动地反映了武定基地中草药资源状况。本书编撰时参考了《云南植物志》，植物按哈钦松系统进行分类。拉丁学名以《Flora of China》为准。

本书在编写过程中，云南省药物研究所参与做了大量的工作，并承蒙中科院昆明植物研究所资深院士、植物学家吴征镒先生，原国家中医药管理局、国家食品药品监督管理局副局长、著名药学家任德权先生为本书作序，在此表示衷心感谢。由于我们水平有限，错误和疏漏之处在所难免，敬请赐教。

编者

Since the publishing over 100 years ago, Yunnan Baiyao Powder has gone through all the vicissitudes, possessed a strong sense of saving nation, and has saved many people's lives, enjoying a reputation of holy traumatologic medicine and best medicine in southern Yunnan province. Yunnan Baiyao Group Co., Ltd is one of the ten key large-scale enterprises in Yunnan province; top 100 enterprises in Yunnan province; as well as the first national innovative enterprises. The brand of Yunnan Baiyao, awarded as Chinese Famous Brand, is the best brand in Chinese herbal medical industry, and the major economic indicators of the company top the industry. In 2009, the company was awarded "Chinese State-Owned Enterprise Model", and was also the only one enterprise in Yunnan and in pharmaceutical industry awarded in years.

Yunnan Baiyao Group follows closely the harmonious development of enterprise, society, and environment, and works on building enterprise core competitiveness and the ability of sustainable development. To guarantee the medicinal materials demand of company's long-term development, and to achieve the standardization and modernization of Chinese herbal medicine planting, in 2001, Yunnan Baiyao Group Co., Ltd established Yunan Baiyao Group TCM Germ Plasm Cultivation Co., Ltd in Guanpo Liangzi, Bailu town, Wuding county, Chuxiong, Yunnan province, covering an area of nearly 20,000 acres, and invested and founded large-scale nuisanceless Chinese herbal medicine planting base. Cooperating with colleges, universities and scientific research institutions at home and abroad, built up a technical platform for the acclimation, planting, experiment and research of the wild Chinese herbal medicine to breed the rare and endangered Chinese herbal medicine provenance and to plant Chinese herbal medicinal materials. At present, there are various famous and rare Chinese herbal medicine and folk officinal plants in Yunnan minority nationalities being planted, such as paris, aconitum vilmorinianum, and psammosilene tunicoides. It has become a Chinese herbal medicine planting base having Yi minority medicine as the major species, and become a Chinese medicinal materials provenance breeding base. There are flourishing trees and





grass, modern greenhouses and canopies, and exotic flowers and herbs everywhere in the base. The advantageous natural environment in the base brings up plentiful raw type Chinese herbal medicine resources.

Along with the improvement of science and technology, and the development of medicine industry in Yunnan, more and more attention is paid to Chinese medicine and folk medicine of Yunnan minority nationalities. In order to better publicize, protect, develop and use Chinese herbal medicine and minority folk medicine resources, Chinese herbal medicine resources in the base are investigated, classified, and arranged, and *Chinese Herbal Medicine in Yunnan Baiyao Group Wuding TCM Germ Plasm Cultivation Base* is compiled and published. 108 species Chinese herbal medicine in the base are fully described in the book. Color picture of the plant, the close-up picture of plant flower or fruit, photos of medicine materials, plant origin, morphological character, nature and action, major chemical components, pharmacological action, and resource situation of each medicine are given, as well as the Latin name index of around 900 Chinese herbal medicinal plants grown in the base. Thus, the conditions of Chinese herbal medicine resources in Wuding base are directly and vividly reflected. In the compilation of this book, *Flora Yunnanica* has been referenced, angiosperm is classified in accordance with the Hutchinson system. The Latin names are confirmed according to *Flora of China*.

During the compilation of the book, Yunnan Institute of Material Medica had participated in much work. Thank Mr. Wu Zhengyi, the famous botanist and senior academician in Kunming Institute of Botany, Chinese Academy of Sciences, and Mr. Ren Dequan, the former deputy director general of State Administration of Traditional Chinese Medicine and State Food and Drug Administration, celebrated pharmacologist for the preface. We are sorry for any deficiency and omission brought by our limited capability.

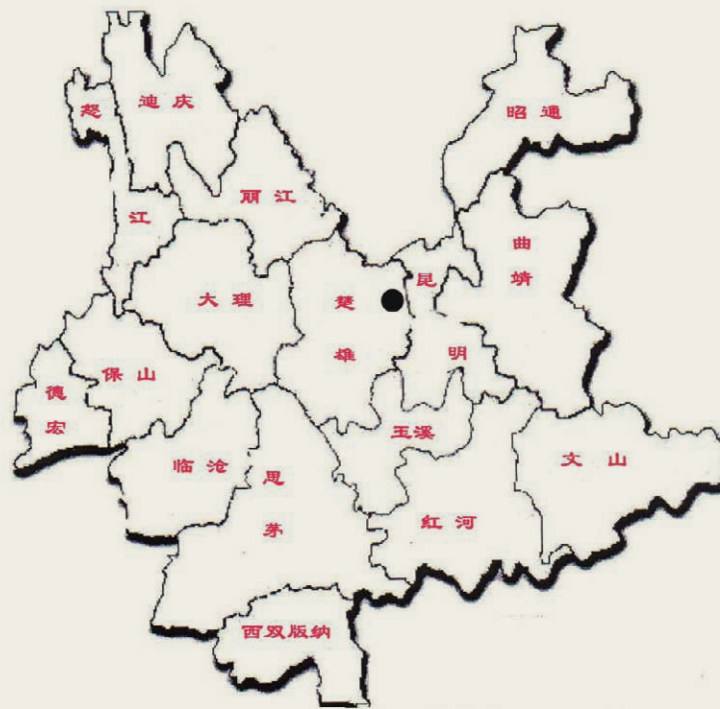
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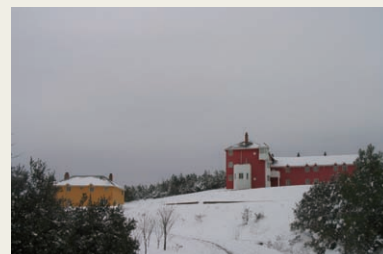
# 云南白药集团股份有限公司

## 武定基地简介

云南白药集团股份有限公司是云南省医药行业的龙头企业，企业的主要产品云南白药被誉为“中华瑰宝”、“伤科圣药”。云南白药是云南省彝族等几种少数民族医药与传统中医药相融合的典范，具有悠久的历史和良好的声誉与品牌。随着医药工业的蓬勃发展，各种药材资源的供需矛盾日益突出，为了解决原料“瓶颈”，加速企业发展，拓展产业链，2001年，云南白药集团出资2100万元，在云南省中药材主产区之一的武定县有偿转让近2万亩荒山林地设立原料种植基地，成立了云南白药集团中药材优质种源繁育有限责任公司（简称：武定基地）。主要从事珍稀濒危药材的迁地保护、引种驯化及栽培技术研究；中药材种植、收购、初加工与销售，中药材种苗的繁育与销售；经济林果木种植、初加工及销售，经济林果木种苗繁育与销售。



●云南白药武定基地

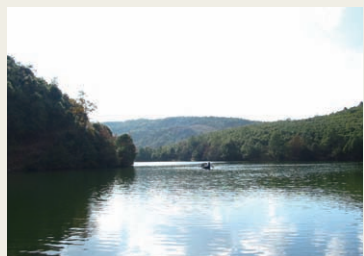


武定基地距昆明134公里、距武定县城56公里、距元谋县城38公里。武定基地位于元谋坝子西边，和元谋坝子直线仅相距10公里，海拔高差1500余米。元谋坝子蒸发的水蒸气在东边山顶（武定基地）遇冷形成雨雾，沉降后基本又流回元谋坝子，形成了武定基地一带降雨较多，林草丰茂，森林覆盖率在80%以上的独特优势。武定基地内现有二座小型水库，石楼梯水库库容58万 $m^3$ ，关坡水库库容12万 $m^3$ 。根据中国科学院昆明植物研究所对武定基地的植物本底调查，武定基地共分布有药用植物近千种。


武定基地成立以来，云南白药集团累计投入资金5700余万元，形成固定资产1600余万元，无形资产1000余万元。武定基地重点配套完善种苗繁育及栽培设施。现建有2000 $m^2$ 的温室，12000 $m^2$ 的钢塑大棚，500亩配套水利管网的试验示范种植田。收集种植云南道地药材云木香、云黄连、白及、半夏、珠子参、川续断等药材近300种，种植国家一级保护植物红豆杉500亩。建成重楼属植物种类最多的重楼种质资源圃一个，滇重楼采种圃10亩，滇重楼示范种植田5亩。建成5亩金铁锁种质资源圃一个。建成50亩黄草乌优质种源繁育圃一个。种有各种经济果木1000多亩，其中杜仲924.7亩、樱桃192.2亩、核桃90.8亩、梅子80.4亩、山楂72.9亩。

武定基地独特的地理环境、优良的种植设施、丰富的物种资源、先进的科研设备，吸引了一批又一批植物学家和技术专家；云南白药集团依托武定基地，建立了博士后流动工作站，与中国药科大学、中国医学科学院北京药用植物研究所、北京师范大学、武汉大学、中国科学院昆明植物研究所、云南农业大学、云南中医学院等科研院所建立了广泛的科技合作关系。先后承担并圆满完成了国家发改委、国家科技部、云南省科技厅及各级政府资助的项目15项。

经过多年的努力，武定基地已成为珍稀濒危中药材的迁地保护、引种驯化及栽培技术研究中心，滇重楼种苗繁育及示范种植中心，云南白药集团的一个对外交流平台和云药产业链的重要组成部分，为生物多样性的保护和中药材资源的合理开发利用起到了积极的示范作用。







# Yunnan Baiyao Group Co., Ltd Introduction to Wuding Base

Yunnan Baiyao Group Co., Ltd is the leading enterprise in the pharmaceutical industry in Yunnan province, and its principal product, Yunnan Baiyao Powder, is regarded as Chinese treasure and holy traumatologic medicine. Yunnan Baiyao Powder is the combination of medicine of a few ethnic minorities in Yunnan province and traditional Chinese medicine, possessing a long history and favorable fame. Along with the vigorous development of the pharmaceutical industry, the contradiction between the supply and the demand of the various medicine resources is getting larger, and in order to solve this problem, to accelerate the enterprise development, and to widen the industry chain, Yunnan Baiyao Group Co., Ltd invested RMB 21million Yuan in 2001 to establish Yunan Baiyao Group TCM Germ Plasm Cultivation Co., Ltd (Wuding Base for short) in Wuding County, one of the major production areas of Chinese herbal medicine in Yunnan province, by the compensable transfers of 20,000 acre barren hills and woodland. The base mainly works on the ex situ conservation of rare or endangered crude drugs, introduction and acclimation, and researches on culture techniques; planting, purchasing, pretreating, and sales of the Chinese herbal medicine, and breeding and sales of the Chinese herbal medicine seedling; planting, pretreating, and sales of the production forest fruitwood, and breeding and sales of the production forest fruitwood seedling.

Wuding base is 134 kilometers from Kunming, 56 kilometers from Wuding county, and 38 kilometers from Yuanmou county. It situates on the west side of the Yuanmou basin, and is only 10 kilometers from Yuanmou basin in straight-line distance with an altitude gap of over 1,500 meters. The water vapour evaporated in Yuanmou basin becomes drizzles on the top of the mountain in the east (Wuding base) when meeting with cold air, and then sedimentates and flows back to Yuanmou basin, which attributes to the unique advantages of Wuding base area that abundant raindrops, luxuriant trees and grass, and a forest coverage of over 80%. Inside the Wuding base there are two small-scale reservoirs, 580 000m<sup>3</sup> Shilouti reservoir and 120 000m<sup>3</sup> Guanpo reservoir. According to the plant background survey in Wuding base made by Kunming Institute of Botany, Chinese Academy of Sciences, in Wuding base there are nearly one thousand medicine plants.

Since the establishment of Wuding base, Yunnan Baiyao Group Co., Ltd has totally invested above RMB 57 million Yuan forming fixed assets of over RMB 16 million Yuan and intangible assets of over

RMB 10 million Yuan. Perfection and complementation of seedling breeding and cultivation facilities are given priority to. There are now greenhouse of 2000m<sup>2</sup>, steel and plastic canopy of 12 000m<sup>2</sup>, and experiment and demonstration field of auxiliary hydraulic distribution system. Local medicinal materials in Yunnan province of nearly 300 species have been collected, such as *Aucklandia lappa*, *Coptis teeta*, *Bletilla striata*, *Pinellia ternata*, *Panax pseudogiseng* var. *major*, *Dipsacus asperoides*. 500 acre *Taxus*, first-grade state protection plant, have been planted. A *Paris* germplasm resource nursery, 10 acre seed collection nursery of *Paris Yunnanensis*, 5 acre demonstration planting field of *Paris Yunnanensis*, a *Psammosilene tunicoides* germ plasm resource nursery of 5 acres, a fine provenance breeding nursery of *Aconitum vilmorinianum* of 50 acres have been built. More than 1,000 acre production forest fruitwood has been planted, among which there are 924.7 acre *Eucommia ulmoides*, 192.2 acre cherry, 90.8 acre walnut, 80.4 acre plum, and 72.9 acre hawthorn.

Many botanists and technicians have been attracted by the unique geographic environment, excellent planting facilities, affluent species resources, and advanced scientific equipments in Wuding base. Relying on Wuding Planting base, Yunnan Baiyao Group Co., Ltd has established the post-doctoral mobile work station; has comprehensively cooperated with China Pharmaceutical University, Beijing Institute of Medical Plants, Chinese Academy of Medical Sciences, Beijing Normal University, Wuhan University, Kunming Institute of Botany, Chinese Academy of Sciences, Yunnan Agricultural University, Yunnan University of Traditional Chinese Medicine and etc; has undertaken and completed 15 projects subsidized by National Development and Reform Commission, the Ministry of Science and Technology of China, Yunnan Provincial Science and Technology Department, and government at all levels.

After years of effort, Wuding base has become a research centre of the ex situ conservation of rare or endangered crude drugs, introduction and acclimation, and culture techniques; a centre of rhizoma paridis germplasm breeding and planting demonstration; a platform of exchanges; an essential part of medicine industrial chain in Yunnan; and has positive demonstration effect on the protection of biodiversity and rational exploitation and using of Chinese herbal medical resources.



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