Orchids and its uses in Chinese medicine and health care products

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Introduction

Orchids are very diverse, attractive and economically important plants distributed from tropical to temperate zones. The family Orchidaceae consists of nearly 30,000 wild species and about 100,000 hybrids (Obchant Thaithong, 1999) [1]. All orchids are herbaceous plants in life forms and classified into four categories in natural habitat:

1) Terrestrial orchids (eg. Cymbidium, Arundina etc.)
2) Epiphyte orchids (eg. Dendronbium, Vanda etc.)
3) Lithophyte orchids (eg. Eria, Pholitoda etc.)
4) Saprophyte orchids (eg. Gastrodia, Aphyllorchis etc.)

In China recorded orchid species are 1,247 species in 171 genera; of which Yunnan province has 764 species making up 61% of total orchid species in China. There are 300 species of orchids are used in Chinese medicine (Long and Long, 2006) [2], the most important medicinal orchids are Gastrodia alata; Dendronbium officinale; D. nobile; D. chrysotoxum; D. firmbrateum listed in China Pharmacopeia (pp85, 2010); and Bletilla striata; Gymnadenia; Bulbophyllum etc. are commonly used in Chinese medicine. About 300 species of orchids are used for ornamental purpose in China, eg. Cymbidium, Paphiopedium, Phalaenopsis, Phaius etc.

In China, wild orchids (Cymbidium, Dendronbium, Gastrodia, Bletilla and Paphiopedilum etc.) were harvested grievously from wild habitat areas during 1970-2000 for commercial purposes. Since 2000’s all orchid species are listed in CITIS that is to say all wild orchid species are prohibited for trade under the international Biodiversity Conservation Agreement. Since then, the cultivation of medicinal orchids such as Dendronbium officinale and associated species has been rapidly improved in China, and is being supplied by medicinal orchid’s plantations in China.

Biodiversity conservation is an essential approach for present and future needs of human being. Sustainable use of biodiversity including cultivation orchids is the solution for conservation. Therefore, habitat protection, germplasm conservation and cultivation of useful orchids are the main appropriate approaches for sustainable use of orchids.

Orchids used in traditional chinese medicine

Utility of orchids for medicine in China can be traced back to 3,000 years ago, the earliest records was in ‘Shijing’ on the Spilanthes sinensis in 300BC; the book ‘South China Flora’ recorded use of Dendronbium orchids for anti-toxic treatment, Dendronbium was recorded as ‘lucky herb’. In Tang Dynasty Dendronbium was listed as one of the nine ‘fairy herbs’ meaning herbs from paradise. There are about 300 orchid species are used in traditional Chinese medicines (Long & Long, 2006) [2], the most common used species are:

1) Gastrodia alata: tuber is used for improving memory and brain tonic purposes. Commonly cultivated in high land areas of Guizhou and Yunnan. Known as ‘Tianma’ used as medicine and herbal food.

2) Dendronbium species: including D. officinale; D. nobile; D. chrysotoxum; D. linfonnis; D. nobile; D. devonianum; D. primulinum; D. firmbrateum; D. densiflorum; D. chrysanthum; D. pendulum etc.; are commonly used ones. Dendronbium stem known as ‘Shihu’ is widely used in treatment of blood circulation, cordial system and throat sore. Presently various products are being marketed including processed stem into ‘Fengdou’ Herbal tea and herbal drinks are permitted by government Drug and Food Administration, but the products must have usable certification; stem powder for oral taken; stem cooking with chicken and meat etc. The material is obtained from cultivated land. Bletilla striata: tuber is widely used for cough, lung problem, TB and to stop bleeding etc. It is collected from wild and cultivation on small scale is in practice.

3) Bulbophyllum spp: used in treatment of cough, lung problem and injury. It os is harvested from wild.

4) Arundina graminifolia: traditional Dai medicine known as ‘Wen Shang-hai’ in local Daiel language, a well-known detoxification herb for all diseases before taking medicine and obtained from wild.

5) Eria pannea: whole plant is used for tonic of lung, digestive system inflammation etc, and harvested from wild.

6) Vanda roxburghii: roots are used for rheumatism treatment, recent studies by Indian scientists showing reduce acute inflammation functions. Anoectochilus roxburgii and A. formosanus: both are important medicine in Taiwan for lung, kidney, diabetes and snake-bites etc.

7) Calanthe Elisamaefolia; C. alpina; C. graciliflora and C. clarata are widely used in Yunnan as herbal medicines among ethnic minorities for improving blood circulation and anti-toxication. Coeloglossum viride var. bracteatum: tonic medicine used in...
Market survey

- Traditional market is very rich in local products of orchids. Using ethnobotanical methods to investigate, record and evaluate local products of orchids is very useful.
- Modern market survey is also very important to gather information on new products from orchids, for instance, functional food, cosmetics, essential oil and herbal tea.

Ethnobotanical field survey and inventory

- Interview with informants (rural people, herbal doctors, housewives, forest-products collectors etc.)
- Field observation on orchids and habitat environment.
- Voucher specimens collection with field records.
- Identification and inventory.
- Chemical property investigating at laboratories.
- Evaluation and validation and
- New products design and production (Figure 1).

Conclusion

1) China has rich orchid species diversity as well as traditional knowledge on orchids, which are the fundamental basis of new products development from orchids.
2) China is successful in the development of its rich traditional botanical knowledge into new medicine, functional and healthy food products.
3) China and Asian countries should work together to build-up a bridge for sharing knowledge for development of new products from orchids and many other common medicinal plants for health care and benefit people [3-7].
References


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