



WORLD HEALTH ORGANIZATION

NOTE FOR THE PRESS

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MEDICINAL PLANTS - GUIDELINES TO PROMOTE PATIENT SAFETY AND PLANT CONSERVATION FOR A US\$ 60 BILLION INDUSTRY

WHO issues new recommendations for Ginseng, Echinacea and other medicinal plants

Geneva: The World Health Organization (WHO) today releases guidelines for good agricultural and collection practices for medicinal plants - an industry estimated worth more than US\$ 60 billion. The guidelines are intended for national governments to ensure production of herbal medicines is of good quality, safe, sustainable and poses no threat to either people or the environment.

Herbal medicines could be the natural answer to some ailments and can often be readily available. For these reasons, they are growing in popularity in wealthy countries and their use remains widespread in developing regions.

However, reports of patients experiencing negative health consequences caused by the use of herbal medicines are on the rise. One of the major causes of adverse events is directly linked to the poor quality of herbal medicines, including raw medicinal plant materials, and to the wrong identification of plant species. Cultivating, collecting and classifying plants correctly are therefore of the utmost importance for the quality and safety of products.

In addition to patient safety issues, there is the risk that a growing herbal market and its great commercial benefit might pose a threat to biodiversity through over-harvesting of the raw materials for herbal medicines and other natural health care products. If not controlled, these practices may lead to the extinction of endangered species and the destruction of natural habitats and resources.

The *WHO guidelines on good agricultural and collection practices (GACP) for medicinal plants* are an important initial step to ensure good quality, safe herbal medicines and ecologically sound cultivation practices for future generations. In an easy-to-understand style they cover the spectrum of cultivation and collection activities, including site selection, climate and soil considerations and identification of seeds and plants. Guidance is also given on the main post-harvest operations and

includes legal components such as national and regional laws on quality standards, patent status and benefits sharing.

Background Facts

The safety and quality of raw medicinal plant materials and finished products depend on intrinsic (genetic) or external (environment, collection methods, cultivation, harvest, post-harvest processing, transport and storage practices) factors. Inadvertent contamination by microbial or chemical agents during any of the production stages can also lead to deterioration in safety and quality. Medicinal plants collected in the wild may be contaminated by other species or plant parts through misidentification, accidental contamination or intentional adulteration, all of which may have unsafe consequences.

Adverse reactions due to substitution of incorrect plant:

***Digitalis*:** Cases of serious cardiac arrhythmias were reported in the USA in 1997 following the accidental substitution of plantain, to be used as a dietary supplement, with *Digitalis lanata*, generally used for heart conditions. Subsequent investigations were reported to reveal that large quantities of the misidentified plantain had been shipped to more than 150 manufacturers, distributors and retailers over a two-year period.

***Podophyllum*:** Fourteen cases of *Podophyllum* poisoning have been reported from Hong Kong Special Administrative Region of China following the inadvertent use of the roots *Podophyllum hexandrum* instead of the *Gentiana* and *Clematis* species for their antiviral qualities. It is reported that this accidental substitution arose because of the apparent similarity in the morphology of the roots.

***Aconitum*:** Cases of cardiotoxicity resulting from the ingestion of *Aconitum* species used in complementary medicine for acute infections and panic attacks have been reported from Hong Kong, China. *Aconitum* rootstocks are processed by soaking or boiling them in water in order to hydrolyse the aconite alkaloids into their less toxic, aconine derivatives. Toxicity can, however, result when such processes are mismanaged. In the United Kingdom, the internal use of aconite is restricted to prescription only.

Endangered medicinal plants

The wild types of the popular medicinal plant ginseng (*Panax ginseng*), used to address digestive conditions resulting from nervous disorders, is currently reported to be rapidly declining due to increasing demand and collection.

Wild American ginseng, goldenseal, echinacea, black cohosh, slippery elm and kava kava top the "at-risk list" of endangered species of medicinal plants.

Cultivation has replaced wild collection for the supply of some essential drugs used in modern medicine. The Madagascar rosy periwinkle, *Catharanthus roseus*, is widely cultivated in Spain and the United States for its properties which are considered useful in treating childhood leukaemia and Hodgkin's disease.

A traditional medicine for which demand is greater than the potential for supply is the African tree Pygeum (*Prunus africana*). The bark is a very popular natural remedy for prostate disorders in some European countries such as Spain - but it is harvested from wild trees growing in the mountain forests of continental Africa and in Madagascar and is unsustainable under current practices. While the bark *can* be harvested sustainably, harvesters either cut too much, which results in the death of the trees, or they fell whole trees. The International Centre for Research in

Agroforestry (ICRAF) and others are working to establish sustainable sources of *Prunus africana* through conservation of wild tree populations and assistance to smallholders to grow the tree - something that will also help increase farmers' incomes. ICRAF is also working on a breeding programme to select varieties which will take less time to reach harvestable age.

Devil's Claw, *Harpagophytum procumbens*, is another popular remedy that is unsustainably harvested and may become extinct in the wild under current practices. It has been used as a tonic, as a treatment for arthritis and rheumatism, to reduce fever, ease sore muscles, reduce cholesterol, and externally the ointment is used to treat sores, boils, and ulcers. It is also used to cleanse the lymph system, and to remove toxins from the blood.

Devil's Claw is produced in southern Africa, and Namibia is the biggest exporter in the region. Just under 200 tonnes were exported from Namibia between January and August 2000. Between 10 000 and 15 000 harvesters rely on sales from its collection as their only source of cash. However, current prices are not a true reflection of the real value of their work: indeed, over the last 24 years the price has dropped by as much as 85%. In 1998, a sustainably harvested Devil's Claw project was set up on one resettlement farm in Namibia and has rapidly expanded. The following year, 10 210 kg of certified organic Devil's Claw was produced, providing local people with a sustainable product at a guaranteed and fair price. This could be the way forward, provided that users of Devil's Claw demand that suppliers stock only certified products.

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