

Global Summit on Plant Science

September 21-23, 2015 San Antonio, USA

Biodiversity and conservation of Rare, Endangered and threatened medicinal plants of Western Ghats

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The Western Ghats is very rich in its medicinal wealth. The forests and hills of this region is a treasure house of about 700 medicinal plants. Out of which some are used for traditional and folk medicinal practices. Many are exploited commercially for their active enzymes and their commercial value. There is a global need to conserve and cultivate Medicinal plant. It is being observed that many useful medicinal plants like *Raulfia serpentina*, *Celastrus paniculata* have become either endangered or becoming extinct particularly in the tropical eco-system of developing countries. It is apprehended that the modern allopathic system of medicine will suffer a serious setback if certain medicinal plant species go totally extinct. The uncontrolled collection and sale of large quantities of plant material from the forest leads to destruction of many forest plants. Local communities, traditional medicinal herbalists and herbal medicine vendors popularly collect roots, bark and whole shrubs. This is a serious problem. The need for developing countries to acquire technologies and techniques for programmed cultivation of medicinal plants is a current issue. One has to explore wild medicinal plant species and to bring them under cultivation. Hence, there is imminent need to make efforts for collection, conservation and propagation of endangered medicinal plants, restoring their genetic resources for commercial cultivation.

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Implications of soil organic carbon sequestration in Nepalese agriculture

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Agriculture is one of the sectors most vulnerable to climate change impact. The impact is even stronger in Mountain region of Nepal, where the topography is fragile and agriculture is important for the daily subsistence. Agricultural land being major sources of carbon dioxide (CO₂) emission, which results in an increase of the CO₂ concentration in the atmosphere. The conversion of biomass rich land like forests to agricultural land results in the release of carbon into the atmosphere. Once the CO₂ enters into the atmosphere, it remains as a potent greenhouse gas for decades unless it is absorbed by plants through photosynthesis. Therefore, there is a need for abating CO₂ emissions by enhancing carbon sequestration. Soils store twice as much carbon than vegetation and two thirds more than the atmosphere, and thus can store a significant quantity of CO₂. Unsustainable farming leads to land degradation and the release of soil organic carbon (SOC). SOC may return directly to the atmosphere from the soil when organic material decays through decomposition or burning. SOC is important not only to maintain and enrich soil nutrients, but also in preventing the release of carbon in the forms of CO₂ and Methane (CH₄) into the atmosphere. Mountain agricultural land is sensitive to extreme weather events, such as heavy precipitation or long periods of drought. Such extreme events can trigger high soil erosion leading to losses of SOC. Hence, enhancing and conserving SOC is important for reducing soil erosion and the emission of greenhouse gases from lands, and to maintain a high moisture holding capacity of the soils. In many parts of Nepal, farmers have adopted various soil management practices in an effort to preserve fertile soils, which in many cases contribute to the reduction of carbon emissions.

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