Somatic embryogenesis in Simarouba glauca By: G.R.Rout& P.Das

A Critical Review on Medicinally Important Oil Yielding Plant Laxmitaru(Simarouba glauca DC.)

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Background

* Simarouba glauca has a long history in herbal medicine in many countries.
* Simarouba is one of the important herbal drug used against dysentery, its bark is also known as dysentery bark.
* Simarouba is also known for pharmcology properties such as haemostatic, antihelmenthic, antiparasitic, antidysentric and anticancerous.
* The bark is used for fever, malaria, stomach and bowel disorders.

Botanical description

* A rainfed wasteland evergreen ediable oil tree, simarouba glauca is commonly known as paradise tree which belongs to a family simaroubaceae. Glauca means bluish green foliage.
* S.glauca DC. Is indigenous to southern Florida, the west indies and Brazil.

General features of S.gluaca

* This evergreen tree grows to a height of 12-15m
* Flowers are bisexual inconspicuous
* It starts to induce flowers after attaining age of 6-8years.
* The ripen fruits are eaten by birds an play an important role in seed dispersal

Ethenobotanical and pharmaceutical aspects

* Other indigenous tribe throughout the south uses bark for fevers, malaria and dysentery as a haemostatic agent to stop bleeding and as a tonic.
* In Brazilian herbal medicine simarouba is used as a natural remedy against chronic and acute dysentery.
* S.glauca contains glaucarubin having antiamoebic property.

Other uses

* Source of biodiesel and biofuel
* Source of vegetable oil
* Phytoremedation

Cultivation practices

* Propagation
* Climate and soil
* Yield
* pathology

Development of somatic embryos in callus cultures

* Immature fruits were collected from plant 30,60 and 90 days after set.
* The fruits were sterilized and the removal of the embryonic axis were done under sterile conditions.
* Each cotyledon was cultured on Murashige & Skoog(MS) medium supplemented with other nutrients.
* Callus was sub-cultured at 4wks interval onto fresh medium of similar composition

Induction of somatic embryogenesis

* The friable callus were derived from 30,60, and 90 day old cotyledon explants and transferred to MS medium supplemented with various growth regulators.
* The cultures were incubated at 25 °C , 20 replicates of the treatment and the experiment was repeated three times .

Questions