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Mission: High yielding Jatropha for biodiesel

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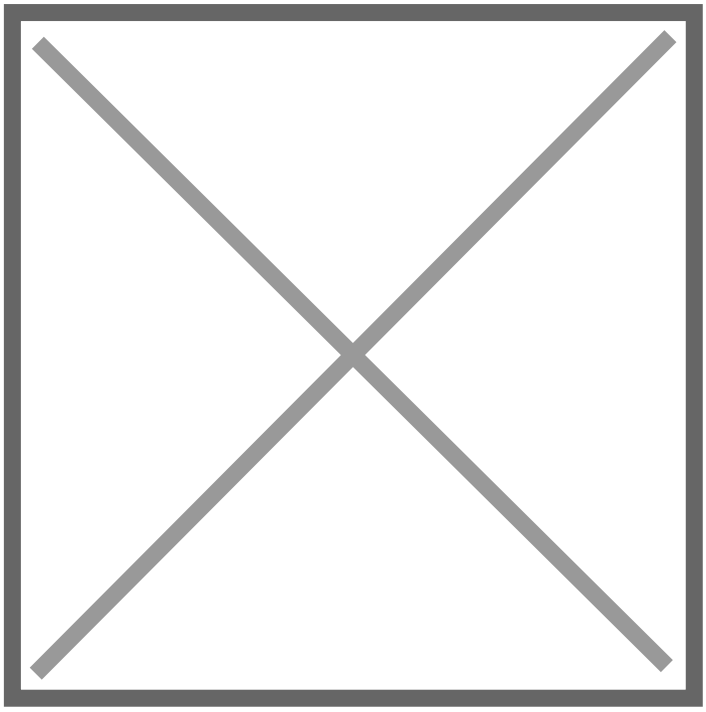
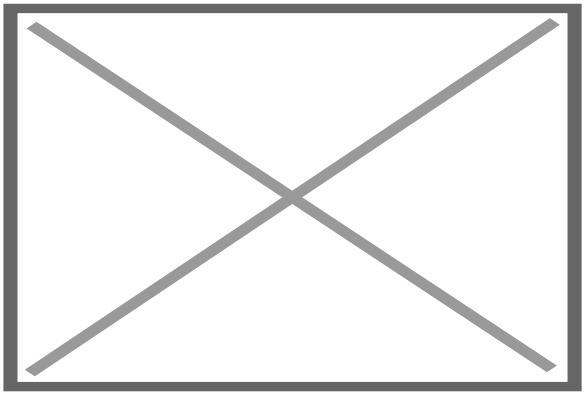
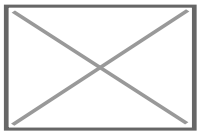




The DBT funding has provided a much-required boost to Mysore-based Labland Biotechs to focus on mass cultivation of high yielding Jatropha plants for sustainable production of biodiesel

Besides the fact that biodiversity in the natural population of Jatropha curcas is narrow, the attempts at producing improved varieties of the plant through tissue culture too have been very limited. Jatropha is a source of biofuel and it can be planted in marginal lands. Improved varieties of the plant can attract rural farmers with marginal lands for Jatropha plantations, which will help to increase biodiesel production.



Mysore-based Labland Biotechs chose to address this issue by following a systematic technology for mass production of elite Jatropha curcas clones from its own germplasm center. The major objective of the project, costing over ₹440 lakh, was to develop a tissue culture production facility for micro-propagation of elite Jatropha curcas plants with higher yield of seeds and oil of superior quality.

There are 70 employees at various levels contributing to the successful implementation of the project.

A soft loan from the Department of Biotechnology under the Small Business Innovation Research Initiative (SBIRI) scheme provided the much-needed impetus to the project. Labland has developed a tissue culture production protocol for Jatropha curcas through direct organogenesis and axillary shoot proliferation, using elite adult plants. A patent is pending for the protocol. These clones have been established in the demonstration fields for stabilizing of agronomical traits through field evaluation and fidelity testing. The technology complements the supply of plantlets to meet commercial demand of quality planting material required for growing Jatropha plantations for oil production.

Dr Geetha Singh, managing director, Labland Biotechs, explains the beginning of the project. Ã¢â?¬Å?Rather than us approaching the DBT, it was the other way round. A presentation by Dr Sudheer Shetty, chairman of Labland, at a national conference on biofuels in 2006 prompted the DBT to invite us to present our achievements on Jatropha at the national micromission,Ã¢â?¬? she says.

Based on subsequent discussions and advice of the DBT, Labland submitted a proposal for the project that was sanctioned in August 2007.

Talking about the importance of the SBIRI funding, Dr Singh says, Ã¢â?¬Å?It was very beneficial as it helped us to establish a dedicated tissue culture production facility for Jatropha curcas at Mysore. For the first generation biotech entrepreneurs, this fund support is a welcome concept and is a commendable program.Ã¢â?¬?

The way forward

Successful completion of the project has enabled commercial production of plantlets at the dedicated facility for distribution among planters to raise Jatropha estates. Further, improvement of indigenous lines has enabled the production and supply of elite clones of Jatropha curcas to increase economic benefits to Jatropha growers. During the project period, the company also created a niche market for supplying Jatropha multi-cultures to research institutions and commercial organizations in India and abroad.

The tissue culture facility's annual production is 15 lakh plantlets and five lakh greenhouse-hardened pot plantlets of Jatropha curcas.

Rahul Koul in New Delhi