

Punjab's first IIT innovates machine to end stubble burning

The writer has posted comments on this article By [Rohan Dua](#) Rohan Dua, TNN | Feb 2, 2013, 06.49 AM IST

CHANDIGARH: Alarmed by massive stubble burning in vast agricultural fields of the state — that triggered massive smog in Delhi — Punjab's first-ever IIT has developed a tech marvel to bring an end to the disastrous practice by the farmers.

The inexpensive prototype, named as [community bio-oil generation plant](#), has been made at a cost of just Rs 19,000 at [IIT-Ropar](#).

The machine will be used for two purposes -- To extract bio-oil from wheat as well as rice straw, and run diesel engine with its blending in the ratio of 70 (diesel):30 (bio-oil).

Stowed away in the rural hinterland of India's cereal bowl, Ropar had recently emerged as the most attractive talent pool for the multinationals among the new IITs when two of its students walked away with offers worth \$105,000 or Rs 63 lakh per annum (LPA) at a U.S.-based health major Epic systems.

The project was completed within a span of two months, under IIT Ropar's flagship programme Rural Technology Action Group (RUTAG).

A budget of Rs 2.15 crore has been allocated for RUTAG under the grants sanctioned by the principal scientific advisor to Union government of India.

"The objective is to help farmers realise that stubble burning is a death-causing practice. From toxic soot to a significant amount of carbon dioxide is released from straws, there is a huge danger there," said Prof [Harpreet Singh](#), the RUTAG facilitator at IIT Ropar.

The technology is such that the plant first converts straws into pellets, using a pelletiser, and then goes to pyroformer and condenser to convert into either of by-products: bio-oil or bio char.

On November 5 last year, the [NASA](#) images had shown Punjab pockmarked with red dots which corresponded to paddy stubble blazes deliberately lit by farmers

On an average, 23.5 million straws are put on fire by the farmers every year. And, an estimated 12 mega tonnes of CO₂, a greenhouse gas, is said to be released in the air through this .

Besides, the environment experts also say that the soil also loses its fertility and farmer-friendly insects and micronutrients.

IIT Ropar even experimented using bio-char as manure for growing onions and found that the yield was better at 3780 g/litre of water than without bio-char at 3320 g/litre.

This no-mean feat comes just at a right time for IIT Ropar when it would be holding the convocation of its first-ever batch on Saturday.