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Bio-jet fuel cleared, stress on exploring better alternatives

By Vijay Mohan

Chandigarh**:** Even as DRDO establishment certified the use of bio-fuels in the An-32 transport aircraft, scientists at another DRDO establishment have contended that bio-jet fuels being used at present suffer from a number of disadvantages. They have stressed upon the need to explore and develop alternative green fuels.

Bio-diesel and ethanol, while technically feasible and proven bio-fuels of the present day, have a direct and indirect impact on the Ozone layer, states a paper authored recently by scientists at the Defence Institute of Bio-Energy Research, Haldwani.

Current geo-political conditions are also driving the world away from the use of first-generation ethanol and bio-diesel, the paper adds, while suggesting that green diesel and bio-butanol are likely alternatives that do not suffer from present day disadvantages. Bio-diesel and green diesel are chemically different.

With environmental pollution, economic repercussions and depleting reserves being a cause for concern due to the use of petroleum products as the prime fuel in transport, aviation and defence sectors across the globe, there is growing focus on the use of bio-fuels as a commercially and technically viable alternative.

In India, the bio-diesel obtained from jatropha plant has been used extensively for trails in vehicles and equipment by the armed forces. Earlier this year, the IAF successfully flew an AN-32 transport aircraft for the first time with a blend of bio-diesel.

On May 24, DRDO's Centre for Military Airworthiness and Certification formally certified these aircraft to fly on blended aviation fuel containing up to 10 per cent bio-fuel. The approval certificate has been handed over to the IAF's No. 3 Base Repair Depot at Chandigarh that overhauls An-32 aero-engines.

Though the use of bio-fuels in India is still at the experimental stage, the armed forces have plans to expand the scope of such propellants in a big way not only to cut down economic costs, but also to strive for greater energy security. Unlike fossil fuels, which have to be extracted from below the earth's surface and refined through chemical processes, bio-fuels originate from readily available or specially cultivated biological feedstock through a host of means such as microbial, chemical, biochemical of thermo-chemical processes.

Pointing out environmental hazards, pollution and agro-economic dilemma caused by the cultivation and processing of present day plants for bio-fuels, the paper has called for a well planned bio-fuel development strategy with diversified, multifunctional agricultural cropping systems, where it is possible to grow food, fuel and fodder from the same field.

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