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Design and development of a forced flow type dryer for medicinal and aromatic crops

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■ **Abstract** : Medicinal and aromatic crops like curry leaf, patchouli, senna etc. are traditionally dried under sun resulting in inferior quality produce. In order to achieve better drying in terms of quality and drying time, an attempt was made to design and develop a mechanical dryer of forced flow type based on preliminary laboratory studies on drying curry leaf. The overall dimension of the dryer was 900 x 900 x 16500 mm. The dryer consists of a drying chamber, plenum chamber, heating chamber and a blower driven by 2HP motor. The performance of the dryer was evaluated for drying curry leaves. Moisture content of curry leaves decreased from about 67 per cent to about 5 per cent (w.b.) in approximately 6 hours for drying 50 kg of fresh curry leaf. The thermal efficiency of the dryer was found to be 45.6 per cent and the heat utilisation factor was 0.32. The quality of the dried curry leaf in terms of volatile oil content, colour and rehydration ratio was found to be good.

■ **KEY WORDS** : Forced flow dryer, Design, Development, Drying, Curry leaf, Performance, Quality

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