

## In this issue

### ***Jatropha curcas* oil: a possible fuel**

*Jatropha* (*Jatropha curcas* Linn.) is a non-edible oil-seed plant with adaptability to marginal semi-arid lands and wastelands. Utilization of *J. curcas* oil as a new source for diesel engine has tremendous scope in contributing to growing needs of energy resources in India. The Indian Government is promoting *jatropha* to reduce dependence on the crude oil and to achieve energy independence by the year 2012, under the National Biodiesel Mission. Owing to its importance, the species has gained popularity and is being scaled up in different parts of India on large scale. There is a good reason for developing *J. curcas* as a new energy crop as it does not compete with conventional food crops for land, water and manpower resources and also it has the ability to make a significant contribution to the nation's growing needs for energy through large scale cultivation with ease. Saikia *et al.* (page 1631) carried out adaptive trails on *J. curcas* accessions collected from different locations of India with an aim to understand the magnitude of genetic variation in growth, behaviour and adaptability in North East India to identify the best sources to be utilized for reforestation and future genetic improvement work. Germplasm used in afforestation programmes in India and other countries, generally uses only locally available material. Thus opportunities for using materials with higher yield potential or with more desirable characteristics might have missed. The work by the authors will facilitate selection of promising accessions for multi-

location evaluation and will also hasten the process of utilization of germplasm.

### **Build earthquake shake table for teaching and research**

Shake tables are effectively used to simulate realistic earthquake ground motion in order to study earthquake-resistant behaviour of structures and equipment. Often they are only credible means of experimentally evaluating performance of many modern earthquake-resistant techniques, such as supplemental damping, base isolation, etc. Also, they can be used to provide hands-on learning experience on dynamic effects of earthquake vibrations using models of soil-foundations and structures, such as building, bridges, etc. Sinha and Ray discuss (page 1611) the



construction of a simple yet versatile uniaxial shake table which can be assembled using servo-hydraulic equipment typically available in structural engineering laboratories and building your own table platform. This low-cost shake table is shown to reproduce even catastrophic earthquake motions such as Kobe rather accurately. Consequently, it is suitable not only for class-room instructions on dynamic behaviour of soils and structures but also for serious research investigations.

### **Engineering antibodies for cancer therapy**

Antibody engineering over the years has reached a stage of maturity where knowledge-based designing is now relatively less complex. The use of recombinant DNA technology has aided the molecular engineering of antibodies in various ways to improve their efficacy, and to counter various challenges posed in the rational designing of therapeutics for the treatment of a wide spectrum of malignancies. The latest concept of antibody humanization has resulted in generating weakly immunogenic chimeric antibody molecules. Furthermore, engineering antibodies to modify effector mechanisms, serum persistence and their arming with toxins and radionuclides have resulted in the development of highly effective molecules of great therapeutic potential. Such engineering of antibody has been possible mainly due to its inherent plastic and multidomain structure, which makes it amenable to various modifications. Choudhary and Batra review (page 1592) the advances in the field of antibody engineering which have enabled the use of antibodies for cancer immunotherapy. Though it has now become possible to modify or design antibodies according to the requirement, many challenges remain. Treatment of haematologic malignancies using immunotherapy has yielded better results as compared to that of solid tumors. Further systematic knowledge-based studies should immensely benefit the development of next generation of immunotherapy regimens.