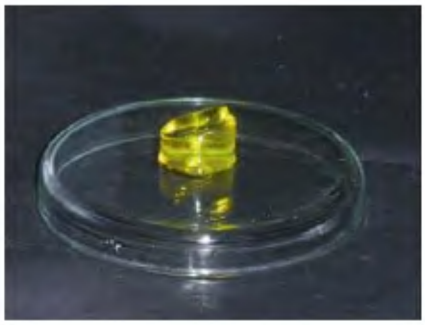
# In this issue

## Binding studies of curcumin to PVA/PVA-hydrogel

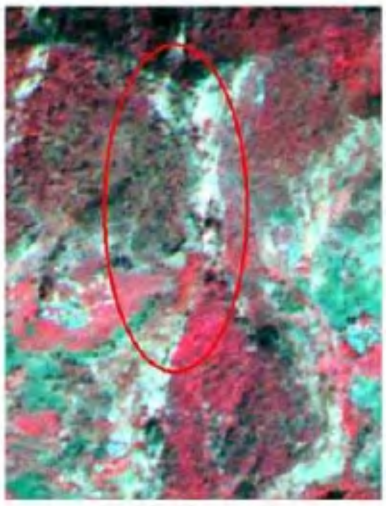
Curcumin is a major polyphenolic pigment of the root turmeric or *Curcuma longa*. For thousands of years, people in India have used turmeric for the treatment of common cold, fever, skin diseases, stomachaches, liver diseases, open wounds, chronic inflammations, etc. About 2–8% of



turmeric by weight is curcumin. Curcumin and some of its analogues are responsible for the bright yellow colour of turmeric. Recent research confirmed many medicinal applications of curcumin. Important among these are: anti-inflammatory agent, chemotherapeutic drug, antioxidant, neuroprotective, and treatment for skin diseases, such as psoriasis. At present, there are several phase I and phase II ongoing clinical trials on curcumin for the treatment of varieties of cancers and Alzheimer's disease. The main constraint in the efficient utilization of therapeutic potential of curcumin is its low bioavailability because of poor absorption, and rapid metabolism. Reports so far indicated extremely low serum levels (in nano grams) of curcumin, even after high amounts (several grams) of oral administration. Conjugates of curcumin with macromolecules and nano-formulations are being employed to increase its circulation time and bio-availability. Hydrogels are widely used as efficient drug delivery systems, for controlled release of drugs to specific targets. Polyvinyl alcohol based hydrogels, formed by $\gamma$-irradiation, are biocompatible, and these hydrogels are being used for treatments of skin burns and fungal infections. Development of hydrogels loaded with curcumin is useful new alternative formulation for the treatment of skin diseases. Such hydrogels can be used for oral consumption also. See **page 1426**.

## Orthorectification of IRS-P6 LISS IV data

India with its first operational remote sensing satellite IRS-1A (1988) to IMS-1 (2008) has almost made a golden journey of success in its ability to explore various resources available on earth for its potential and sustainable use. Every new sensor introduced in space is meant for giving better data with more information for its reliable use in various



sectors. These remote sensing satellite data have been profoundly used in the management of natural resources. LISS-IV sensor carried by IRS P6 (Resourcest-1) satellite provides the highest indigenous multispectral satellite data having the spatial resolution of 5.8 m. LISS IV data acquired over hilly terrains suffers from geometric deformities that need to be removed before it can be used for studying the resource distribution pattern and so the sustainable use of it. A. K. Thakur *et al.* (**page 1458**) deal with a study carried out with LISS IV data in Chamoli district of Garhwal Himalaya. They discuss the problems faced while working on it for the purpose of long term bioresource monitoring and the possible cheaper and reliable way for rectifying it using easily and freely available other datasets in order to make use of its potential power. The authors hope that the article would help the people in utilizing the information available freeware on internet to deal with such alike problems.

## Male fighting fish *Betta splendens*

The male fighting fish *Betta splendens* is ornamentally more beautiful than the female and fetches a higher price. Hence, many attempts have been made to generate all male progenies using one or other steroid; for instance, methyl testosterone treatment generates all male progenies but it reduced the body length of the male to 50% of the control. When allowed to court, the stunted male was not readily acceptable by a normal female but when accepted, could induce its partner to produce 50% eggs only. Discretely immersing the hatchlings for a short period of 9 h at low dose of (1000 µg/l) norethindrone, a mild masculinizing steroid,

it was possible to generate almost (92%) all male progenies, which grew and attained a body size equal to that of a control at the 240th day of rearing. However, the treatment postponed the age of maturity of the male from 110 to 168 days and extended the inter-milting period from 5 to 28 days. Consequently, the progeny production was reduced from 850 to 150. See **page 1446**.