

In this issue

Transgenic Ornamentals

Technology to leverage aesthetics

Our society is ambivalent to transgenics: acceptable in the case of cotton that is worn, unacceptable in the brinjal that we have to eat. Now scientists in the G.B. Pant University of Agriculture and Technology throw a spanner into the discourse by inviting us to consider transgenics in ornamentals.



Out of about 30 species of ornamentals whose traits, such as colour, form and fragrance, have been genetically transformed in labs, the researchers focus on ornamentals with commercial value as cut flowers – rose, chrysanthemum, gladiolus and carnation.

To find out what is in store for you when you visit the flower market, read the Review Article on **page 43** in this issue.

Arsenic Mitigation Technologies

Socio-economic-cultural acceptance

India has more than its share of the problem of arsenic contamination of groundwater and Indian scientists have been publishing papers on new arsenic mitigation technologies. But despite the effectiveness or efficiency, these technologies are not often adopted for use where needed. A Research Article in this issue by scientists in the Montclair State University, New Jersey, examine the factors involved by taking villages near Patna as case studies.

Ensnared between the Ganga and the Son rivers, the study area is rich

but the people there are mostly poor. The groundwater there is contaminated by arsenic. Various strategies including renovation of open dug wells, construction of sanitary wells, deep tube wells, rainwater harvesting systems, India mark III hand pumps, installation of arsenic-removal plants and construction of community-based systems to draw arsenic-free water from deep aquifers, have been tried by the authorities in the attempt to provide safer water.

The researchers find that gender, age, education, occupation, income, housing status, time spent collecting water, distance travelled to collect water, awareness about arsenic and associated issues, the costs for arsenic-free sources, etc. are significant variables that determine the acceptance of arsenic mitigation technologies. Turn to **page 80** for more.

Chicken and Mung Bean Sprouts

Breeding antibiotic resistance?

Chicken is well known as Salmonellosis carrier. But we buy chicken anyway. Mung sprouts, source of protein for vegetarians, are responsible for major food-borne outbreaks. But sprouts are very popular in cities.

Researchers in the University of Mumbai and the BARC bought chicken from the market within 2–3 h of slaughter and mung beans sprouted for 72 hours.

Then they cultured both and they checked for antibiotic resistant strains. What they found is enough to make people sit up. Go to **page 71** in this issue to find out more about the microbes you get for free along with the chicken and mung bean you buy.

They also did a metagenomic analysis to find out species which cannot be cultured. The data given in the Research Article raises questions on the limitations of the culture mediums that we have so far. Innovations, similar to using coconut milk in the culture medium for bamboo tissue

culture, are called for, to find the required additions to the repertoire of culture media. The ‘non-culturable’ bacteria revealed by metagenomic analysis need to be tackled by appropriate media.

Keoladeo National Park

The Keoladeo National Park was created in 1956. There was a wetland in this semi-arid region of Rajasthan, appropriate as bird sanctuary. The water body is now artificially maintained as refuge for waterfowls.

A water body, however small, is a nucleus for the explosion of biodiversity. Besides birds and fish, it has hundreds of species of flowering plants. However, the number of mammal species is very small. Some carnivores have disappeared from the area. So the population dynamics of the herbivores has changed in the recent past.

In a Research Article on **page 103** in this issue, scientists from Coimbatore, Manipal and Delhi, examine the mammal diversity population structure of the ungulates in the national park at Bharatpur, Rajasthan. From October 2014 to June 2015, they conducted line transect surveys across all habitat types of the park to collect data on the populations of chital, feral cattle, nilgai and wild boar. They looked into herd size and cluster density to estimate the density of the ungulates. Interesting data on the sex ratios and ratio of young individuals to adult females was unearthed.

The shifts in the flora and fauna of a protected national park have implications on our understanding of ecosystems. Such estimates, if done periodically, will help us manage the National Park better.

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